

SAT I: Reasoning Test

Saturday, October 2001

YOUR NAME (PRINT) _____
 LAST FIRST MI
 TEST CENTER _____
 NUMBER NAME OF TEST CENTER ROOM NUMBER

SAT® I: Reasoning Test — General Directions

Timing

- You will have three hours to work on this test.
- There are five 30-minute sections and two 15-minute sections.
- You may work on only one section at a time.
- The supervisor will tell you when to begin and end each section.
- If you finish a section before time is called, check your work on that section. You may NOT turn to any other section.
- Work as rapidly as you can without losing accuracy. Don't waste time on questions that seem too difficult for you.

IMPORTANT: The codes below are unique to your test book. Copy them on your answer sheet in boxes 8 and 9 and fill in the corresponding ovals exactly as shown.

Marking Answers

- Carefully mark only one answer for each question.
- Make sure each mark is dark and completely fills the oval.
- Do not make any stray marks on your answer sheet.
- If you erase, do so completely. Incomplete erasures may be scored as intended answers.
- Use only the answer spaces that correspond to the question numbers.
- For questions with only four answer choices, an answer marked in oval E will not be scored.
- Use the test book for scratchwork, but you will not receive credit for anything written there.
- You may not transfer answers to your answer sheet or fill in ovals after time has been called.
- You may not fold or remove pages or portions of a page from this book, or take the book or answer sheet from the testing room.

Scoring

- For each correct answer, you receive one point.
- For questions you omit, you receive no points.
- For a wrong answer to a multiple-choice question, you lose a fraction of a point.
 - If you can eliminate one or more of the answer choices as wrong, however, you increase your chances of choosing the correct answer and earning one point.
 - If you can't eliminate any choice, move on. You can return to the question later if there is time.
- For a wrong answer to a math question that is not multiple-choice, you don't lose any points.

8. Form Code				
(A)	(A)	(0)	(0)	(0)
(B)	(B)	(1)	(1)	(1)
(C)	(C)	(2)	(2)	(2)
(D)	(D)	(3)	(3)	(3)
(E)	(E)	(4)	(4)	(4)
(F)	(F)	(5)	(5)	(5)
(G)	(G)	(6)	(6)	(6)
(H)	(H)	(7)	(7)	(7)
(I)	(I)	(8)	(8)	(8)
(J)	(J)	(9)	(9)	(9)
(K)	(K)			
(L)	(L)			
(M)	(M)			
(N)	(N)			
(O)	(O)			
(P)	(P)			
(Q)	(Q)			
(R)	(R)			
(S)	(S)			
(T)	(T)			
(U)	(U)			
(V)	(V)			
(W)	(W)			
(X)	(X)			
(Y)	(Y)			
(Z)	(Z)			

9. Test Form

The passages for this test have been adapted from published material. The ideas contained in them do not necessarily represent the opinions of the College Board or Educational Testing Service.

DO NOT OPEN THIS BOOK UNTIL THE SUPERVISOR TELLS YOU TO DO SO.

Use a No. 2 pencil only. Be sure each mark is dark and completely fills the intended oval. Completely erase any errors or stray marks.

1. Your Name

First 4 letters of Last Name	First init.	Mid. init.
<input type="text"/>	<input type="text"/>	<input type="text"/>

A	A	A	A	A	A
B	B	B	B	B	B
C	C	C	C	C	C
D	D	D	D	D	D
E	E	E	E	E	E
F	F	F	F	F	F
G	G	G	G	G	G
H	H	H	H	H	H
I	I	I	I	I	I
J	J	J	J	J	J
K	K	K	K	K	K
L	L	L	L	L	L
M	M	M	M	M	M
N	N	N	N	N	N
O	O	O	O	O	O
P	P	P	P	P	P
Q	Q	Q	Q	Q	Q
R	R	R	R	R	R
S	S	S	S	S	S
T	T	T	T	T	T
U	U	U	U	U	U
V	V	V	V	V	V
W	W	W	W	W	W
X	X	X	X	X	X
Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z

2. Your Name: _____
(Print) Last First M.I.

I agree to the conditions on the back of the SAT I test book.

Signature: _____ **Date:** ____/____/____

Home Address: _____
(Print) Number and Street

_____ City State Zip Code

Center: _____
(Print) City State Center Number

IMPORTANT: Fill in items 8 and 9 exactly as shown on the back of test book.

8. Form Code
 (Copy and grid as on back of test book.)

3. Date of Birth

Month	Day	Year
Jan. <input type="radio"/>		
Feb. <input type="radio"/>		
Mar. <input type="radio"/>	<input type="text"/>	<input type="text"/>
Apr. <input type="radio"/>	<input type="text"/>	<input type="text"/>
May <input type="radio"/>	<input type="text"/>	<input type="text"/>
June <input type="radio"/>	<input type="text"/>	<input type="text"/>
July <input type="radio"/>	<input type="text"/>	<input type="text"/>
Aug. <input type="radio"/>	<input type="text"/>	<input type="text"/>
Sept. <input type="radio"/>	<input type="text"/>	<input type="text"/>
Oct. <input type="radio"/>	<input type="text"/>	<input type="text"/>
Nov. <input type="radio"/>	<input type="text"/>	<input type="text"/>
Dec. <input type="radio"/>	<input type="text"/>	<input type="text"/>

4. Social Security Number

<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								
<input type="text"/>								

A	A	0	0	0
B	B	1	1	1
C	C	2	2	2
D	D	3	3	3
E	E	4	4	4
F	F	5	5	5
G	G	6	6	6
H	H	7	7	7
I	I	8	8	8
J	J	9	9	9
K	K			
L	L			
M	M			
N	N			
O	O			
P	P			
Q	Q			
R	R			
S	S			
T	T			
U	U			
V	V			
W	W			
X	X			
Y	Y			
Z	Z			

6. Registration Number
 (Copy from Admission Ticket.)

<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
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<input type="text"/>						

7. Test Book Serial Number
 (Copy from front of test book.)

<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
<input type="text"/>						
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<input type="text"/>						
<input type="text"/>						
<input type="text"/>						

5. Sex

Female Male

9. Test Form
 (Copy from back of test book.)

FOR ETS USE ONLY

Start with number 1 for each new section. If a section has fewer questions than answer spaces, leave the extra answer spaces blank.

SECTION 1	1	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	11	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	21	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	31	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	2	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	12	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	22	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	32	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	3	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	13	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	23	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	33	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	4	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	14	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	24	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	34	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	5	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	15	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	25	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	35	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	6	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	16	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	26	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	36	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	7	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	17	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	27	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	37	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	8	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	18	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	28	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	38	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	9	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	19	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	29	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	39	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	10	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	20	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	30	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	40	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E

SECTION 2	1	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	11	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	21	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	31	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	2	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	12	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	22	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	32	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	3	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	13	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	23	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	33	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	4	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	14	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	24	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	34	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	5	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	15	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	25	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	35	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	6	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	16	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	26	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	36	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	7	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	17	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	27	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	37	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	8	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	18	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	28	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	38	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	9	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	19	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	29	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	39	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E
	10	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	20	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	30	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E	40	<input type="radio"/> A	<input type="radio"/> B	<input type="radio"/> C	<input type="radio"/> D	<input type="radio"/> E

Start with number 1 for each new section. If a section has fewer questions than answer spaces, leave the extra answer spaces blank.

SECTION
3

- | | | | | | |
|----|-----|-----|-----|-----|-----|
| 1 | (A) | (B) | (C) | (D) | (E) |
| 2 | (A) | (B) | (C) | (D) | (E) |
| 3 | (A) | (B) | (C) | (D) | (E) |
| 4 | (A) | (B) | (C) | (D) | (E) |
| 5 | (A) | (B) | (C) | (D) | (E) |
| 6 | (A) | (B) | (C) | (D) | (E) |
| 7 | (A) | (B) | (C) | (D) | (E) |
| 8 | (A) | (B) | (C) | (D) | (E) |
| 9 | (A) | (B) | (C) | (D) | (E) |
| 10 | (A) | (B) | (C) | (D) | (E) |
| 11 | (A) | (B) | (C) | (D) | (E) |
| 12 | (A) | (B) | (C) | (D) | (E) |
| 13 | (A) | (B) | (C) | (D) | (E) |
| 14 | (A) | (B) | (C) | (D) | (E) |
| 15 | (A) | (B) | (C) | (D) | (E) |
- | | | | | | |
|----|-----|-----|-----|-----|-----|
| 16 | (A) | (B) | (C) | (D) | (E) |
| 17 | (A) | (B) | (C) | (D) | (E) |
| 18 | (A) | (B) | (C) | (D) | (E) |
| 19 | (A) | (B) | (C) | (D) | (E) |
| 20 | (A) | (B) | (C) | (D) | (E) |
| 21 | (A) | (B) | (C) | (D) | (E) |
| 22 | (A) | (B) | (C) | (D) | (E) |
| 23 | (A) | (B) | (C) | (D) | (E) |
| 24 | (A) | (B) | (C) | (D) | (E) |
| 25 | (A) | (B) | (C) | (D) | (E) |
| 26 | (A) | (B) | (C) | (D) | (E) |
| 27 | (A) | (B) | (C) | (D) | (E) |
| 28 | (A) | (B) | (C) | (D) | (E) |
| 29 | (A) | (B) | (C) | (D) | (E) |
| 30 | (A) | (B) | (C) | (D) | (E) |
- | | | | | | |
|----|-----|-----|-----|-----|-----|
| 31 | (A) | (B) | (C) | (D) | (E) |
| 32 | (A) | (B) | (C) | (D) | (E) |
| 33 | (A) | (B) | (C) | (D) | (E) |
| 34 | (A) | (B) | (C) | (D) | (E) |
| 35 | (A) | (B) | (C) | (D) | (E) |
| 36 | (A) | (B) | (C) | (D) | (E) |
| 37 | (A) | (B) | (C) | (D) | (E) |
| 38 | (A) | (B) | (C) | (D) | (E) |
| 39 | (A) | (B) | (C) | (D) | (E) |
| 40 | (A) | (B) | (C) | (D) | (E) |

If section 3 of your test book contains math questions that are not multiple-choice, continue to item 16 below. Otherwise, continue to item 16 above.

ONLY ANSWERS ENTERED IN THE OVALS IN EACH GRID AREA WILL BE SCORED.
YOU WILL NOT RECEIVE CREDIT FOR ANYTHING WRITTEN IN THE BOXES ABOVE THE OVALS.

16				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

17				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

18				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

19				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

20				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

21				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

22				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

23				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

24				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

25				
	/	/		
.
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

BE SURE TO ERASE ANY ERRORS OR STRAY MARKS COMPLETELY.

DO NOT WRITE IN THIS AREA.

0

PLEASE PRINT YOUR INITIALS

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First Middle Last

Start with number 1 for each new section. If a section has fewer questions than answer spaces, leave the extra answer spaces blank.

<p>SECTION</p> <p>5</p>	<p>1 (A) (B) (C) (D) (E)</p> <p>2 (A) (B) (C) (D) (E)</p> <p>3 (A) (B) (C) (D) (E)</p> <p>4 (A) (B) (C) (D) (E)</p> <p>5 (A) (B) (C) (D) (E)</p> <p>6 (A) (B) (C) (D) (E)</p> <p>7 (A) (B) (C) (D) (E)</p> <p>8 (A) (B) (C) (D) (E)</p> <p>9 (A) (B) (C) (D) (E)</p> <p>10 (A) (B) (C) (D) (E)</p>	<p>11 (A) (B) (C) (D) (E)</p> <p>12 (A) (B) (C) (D) (E)</p> <p>13 (A) (B) (C) (D) (E)</p> <p>14 (A) (B) (C) (D) (E)</p> <p>15 (A) (B) (C) (D) (E)</p> <p>16 (A) (B) (C) (D) (E)</p> <p>17 (A) (B) (C) (D) (E)</p> <p>18 (A) (B) (C) (D) (E)</p> <p>19 (A) (B) (C) (D) (E)</p> <p>20 (A) (B) (C) (D) (E)</p>	<p>21 (A) (B) (C) (D) (E)</p> <p>22 (A) (B) (C) (D) (E)</p> <p>23 (A) (B) (C) (D) (E)</p> <p>24 (A) (B) (C) (D) (E)</p> <p>25 (A) (B) (C) (D) (E)</p> <p>26 (A) (B) (C) (D) (E)</p> <p>27 (A) (B) (C) (D) (E)</p> <p>28 (A) (B) (C) (D) (E)</p> <p>29 (A) (B) (C) (D) (E)</p> <p>30 (A) (B) (C) (D) (E)</p>	<p>31 (A) (B) (C) (D) (E)</p> <p>32 (A) (B) (C) (D) (E)</p> <p>33 (A) (B) (C) (D) (E)</p> <p>34 (A) (B) (C) (D) (E)</p> <p>35 (A) (B) (C) (D) (E)</p> <p>36 (A) (B) (C) (D) (E)</p> <p>37 (A) (B) (C) (D) (E)</p> <p>38 (A) (B) (C) (D) (E)</p> <p>39 (A) (B) (C) (D) (E)</p> <p>40 (A) (B) (C) (D) (E)</p>
<p>SECTION</p> <p>6</p>	<p>1 (A) (B) (C) (D) (E)</p> <p>2 (A) (B) (C) (D) (E)</p> <p>3 (A) (B) (C) (D) (E)</p> <p>4 (A) (B) (C) (D) (E)</p> <p>5 (A) (B) (C) (D) (E)</p>	<p>6 (A) (B) (C) (D) (E)</p> <p>7 (A) (B) (C) (D) (E)</p> <p>8 (A) (B) (C) (D) (E)</p> <p>9 (A) (B) (C) (D) (E)</p> <p>10 (A) (B) (C) (D) (E)</p>	<p>11 (A) (B) (C) (D) (E)</p> <p>12 (A) (B) (C) (D) (E)</p> <p>13 (A) (B) (C) (D) (E)</p> <p>14 (A) (B) (C) (D) (E)</p> <p>15 (A) (B) (C) (D) (E)</p>	<p>16 (A) (B) (C) (D) (E)</p> <p>17 (A) (B) (C) (D) (E)</p> <p>18 (A) (B) (C) (D) (E)</p> <p>19 (A) (B) (C) (D) (E)</p> <p>20 (A) (B) (C) (D) (E)</p>
<p>SECTION</p> <p>7</p>	<p>1 (A) (B) (C) (D) (E)</p> <p>2 (A) (B) (C) (D) (E)</p> <p>3 (A) (B) (C) (D) (E)</p> <p>4 (A) (B) (C) (D) (E)</p> <p>5 (A) (B) (C) (D) (E)</p>	<p>6 (A) (B) (C) (D) (E)</p> <p>7 (A) (B) (C) (D) (E)</p> <p>8 (A) (B) (C) (D) (E)</p> <p>9 (A) (B) (C) (D) (E)</p> <p>10 (A) (B) (C) (D) (E)</p>	<p>11 (A) (B) (C) (D) (E)</p> <p>12 (A) (B) (C) (D) (E)</p> <p>13 (A) (B) (C) (D) (E)</p> <p>14 (A) (B) (C) (D) (E)</p> <p>15 (A) (B) (C) (D) (E)</p>	<p>16 (A) (B) (C) (D) (E)</p> <p>17 (A) (B) (C) (D) (E)</p> <p>18 (A) (B) (C) (D) (E)</p> <p>19 (A) (B) (C) (D) (E)</p> <p>20 (A) (B) (C) (D) (E)</p>

CERTIFICATION STATEMENT

Copy the statement below (do not print) and sign your name as you would an official document.

I hereby agree to the conditions set forth in the *Registration Bulletin* and certify that I am the person whose name and address appear on this answer sheet.

Signature: _____ Date: _____



SECTION 1
Time — 30 minutes
30 Questions

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding oval on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Medieval kingdoms did not become constitutional republics overnight; on the contrary, the change was -----.

- (A) unpopular (B) unexpected
(C) advantageous (D) sufficient
(E) gradual

(A) (B) (C) (D)

1. Much of our knowledge of dinosaurs comes from excavated bones, which, in ----- other clues such as fossilized tracks and eggs, help us to ----- the evolution of these creatures.
 - (A) convergence with . . supplant
 - (B) divergence from . . decode
 - (C) dependence on . . belie
 - (D) opposition to . . amplify
 - (E) conjunction with . . trace
2. Responding to criticism that the script was rambling and -----, the new screenwriter revised the dialogue for greater succinctness and -----.
 - (A) engaging . . simplicity
 - (B) subjective . . ambiguity
 - (C) muddled . . clarity
 - (D) terse . . emptiness
 - (E) difficult . . abstraction
3. Vernal pools are among the most ----- of ponds: they form as a result of snowmelt and a high water table in winter, and then they ----- by late summer.
 - (A) transitory . . expand
 - (B) anachronistic . . overflow
 - (C) immutable . . drain
 - (D) itinerant . . teem
 - (E) ephemeral . . evaporate
4. During the 1990's, Shanghai benefited from an architectural -----, the result of a dramatic increase in innovative and artistic building.
 - (A) intransigence (B) plenitude (C) desecration
 - (D) stagnation (E) renaissance
5. Many subatomic nuclear particles are ----- and nearly -----: they are hard to track as well as to detect.
 - (A) unstable . . explosive
 - (B) elusive . . imperceptible
 - (C) minute . . immobile
 - (D) charged . . reactive
 - (E) tenuous . . indivisible
6. Luisa worked with extreme precision, ----- that served her well in her law career.
 - (A) a meticulousness (B) an effrontery
 - (C) an inhibition (D) a litigiousness
 - (E) an impetuosity
7. The crafty child tricked his innocent brother, a particularly ----- and trusting boy, into committing a mischievous prank.
 - (A) guileless (B) intrusive (C) astute
 - (D) opportunistic (E) circumspect
8. Ellen Ochoa's ----- with the apparatus in the space shuttle Discovery was apparent when she adroitly manipulated the shuttle's robot arm.
 - (A) compromise (B) humility (C) machinations
 - (D) synergy (E) deftness
9. In 1916 Yellowstone National Park had only 25 bison, but the population has since ----- to more than 2,000.
 - (A) dispersed (B) mediated (C) attenuated
 - (D) burgeoned (E) reconciled



Each question below consists of a related pair of words or phrases, followed by five pairs of words or phrases labeled A through E. Select the pair that **best** expresses a relationship similar to that expressed in the original pair.

Example:

CRUMB : BREAD ::

- (A) ounce : unit
- (B) splinter : wood
- (C) water : bucket
- (D) twine : rope
- (E) cream : butter

(A) (B) (C) (D) (E)

10. BROOM : DIRT ::

- (A) chimney : soot
- (B) mop : floor
- (C) rake : leaves
- (D) shovel : hole
- (E) hammer : fragments

11. BURNER : COOK ::

- (A) lampshade : brighten
- (B) furnace : fuel
- (C) boat : float
- (D) freezer : thaw
- (E) fan : ventilate

12. CALLIGRAPHY : HANDWRITING ::

- (A) photography : film
- (B) stenography : speech
- (C) pottery : clay
- (D) embroidery : needlework
- (E) loom : weaving

13. DESPICABLE : SCORN ::

- (A) resourceful : cleverness
- (B) correctable : error
- (C) eligible : qualification
- (D) laughable : respect
- (E) noteworthy : attention

14. LANDSCAPE : PAINTING ::

- (A) biography : life
- (B) cartoon : newspaper
- (C) canvas : easel
- (D) ventriloquism : voice
- (E) anthem : song

15. STREAMLINE : COMPLEXITY ::

- (A) improve : efficiency
- (B) deliver : destination
- (C) corrupt : impurity
- (D) stretch : elasticity
- (E) depreciate : value



Each passage below is followed by questions based on its content. Answer the questions on the basis of what is stated or implied in each passage and in any introductory material that may be provided.

Questions 16-21 are based on the following passage.

The following passage is from a 1994 collection of essays about animals, written by a poet, philosopher, and animal trainer.

The question that comes first to my mind is this: What would it mean to say that an animal has the right to the pursuit of happiness? How would that come about, and in relationship to whom?

Line 5 In speaking of “animal happiness,” we often tend to mean something like “creature comforts.” The emblems of this are the golden retriever rolling in the grass, the horse with his nose deep in the oats, kitty by the fire. Creature comforts are important to animals: “Grub first, then ethics”
10 is a motto that would describe many a wise Labrador retriever, and I have a bull terrier named Annie whose continual quest for the perfect pillow inspires her to awesome feats. But there is something more to animals, something more to my Annie, a capacity for satisfactions that come from work in the full sense—something
15 approximately like what leads some people to insist that they need a career (though my own temperament is such that I think of a good woodcarver or a dancer or a poet sooner than I think of a business executive when I
20 contemplate the kind of happiness enjoyed by an accomplished dressage¹ horse). This happiness, like the artist’s, must come from something within the animal, something trainers call talent, and so cannot be imposed on the animal. But at the same time it does not arise in a
25 vacuum; if it had not been a fairly ordinary thing in one part of the world at one point to teach young children to play the harpsichord, it is doubtful that Mozart’s music would exist. There are animal versions, if not equivalents,
30 of Mozart, and they cannot make their spontaneous passions into sustained happiness without education, any more than Mozart could have.

Aristotle identified happiness with ethics and with work, unlike Thomas Jefferson, who defined happiness as
35 “Indolence of Body; Tranquility of Mind,” and thus what I call creature comforts. Aristotle also excluded as unethical anything that animals and artists do, for reasons that look wholly benighted to me. Nonetheless, his central insights are more helpful than anything else I know in beginning to understand why some horses and dogs can only be
40 described as competent, good at what they do, and therefore happy. Not happy because leading lives of pleasure, but rather happy because leading lives in which the sensation of getting it right, the “click,” as of the pleasure that comes from solving a puzzle or surmounting something,
45 is a governing principle.

¹Dressage is a complex series of movements signaled to a horse by its rider.

16. The author presents examples in lines 7-8 in order to
- (A) illustrate the variety of activities in which animals engage
 - (B) suggest that appearances of happiness are deceptive
 - (C) evoke images of contentment
 - (D) support an apparently implausible argument
 - (E) arouse nostalgic longings
17. The motto in line 9 indicates that animals
- (A) are much more intelligent than many people believe
 - (B) have been forced to develop keen survival skills
 - (C) desire consistency in their daily lives
 - (D) enjoy close relationships with human beings
 - (E) are concerned primarily with immediate physical gratification
18. Which of the following statements is most consistent with the author’s discussion of “temperament” in lines 17-21?
- (A) The author believes a poet can be successful in business.
 - (B) The author considers artistic pursuits to be the most personally fulfilling of all endeavors.
 - (C) The author suspects that a busy life can have its own rewards.
 - (D) The author believes that few people are ever satisfied with the jobs they have chosen.
 - (E) The author considers subjectivity and self-knowledge to be critical to human gratification.
19. The author’s discussion of Mozart in lines 25-28 primarily emphasizes the
- (A) role of social circumstances in the emergence of a musical genius
 - (B) fact that young children are sometimes pushed to excel
 - (C) observation that genius was more common in the past than it is today
 - (D) belief that the harpsichord was the ideal musical instrument for Mozart’s early talent
 - (E) pleasure that artists derive from achievement



20. In line 30, “passions” most nearly means

- (A) love affairs
- (B) violent outbursts
- (C) enthusiasms
- (D) prejudices
- (E) sufferings

21. Which situation most accurately illustrates the author’s definition of a happy animal?

- (A) A bird finding its one lifetime mate
- (B) A dog herding sheep into a pen
- (C) A horse being carefully groomed for a show
- (D) A monkey escaping from a city zoo
- (E) A cat caring devotedly for her kittens



Questions 22-30 are based on the following passage.

This passage was written in 1996 after the discovery of a meteorite that appeared to contain fossil evidence of microscopic life on Mars.

The rock that sprang to Martian “life” late last summer did not shock me by offering up apparent fossils of an extinct alien form of life. I had long believed that the universe teems with life elsewhere, and that our failure to find it simply results from a lack of exploration. What did amaze me about the potato-size rock that fell from Mars was that it had traveled millions of miles across space to land here, blasted from world to world by a planetary collision of the sort that purportedly killed off our dinosaurs, and had lain waiting for millennia upon an Antarctic ice field, until an observant young woman traveling in an expedition party picked it up, because she figured that it had come from another world. How could she know such a thing?

The composition of ALH 84001, as the much scrutinized rock is designated, closely matches the makeup of Martian matter that was analyzed on site in 1976 by miniature chemistry laboratories aboard two Viking Mars landers. As a result of this positive identification, no astronomer seriously doubts the meteorite’s Martian origin. Researchers think they have pinpointed its former resting place to just two possible sites—a region called Sinus Sabaeus, fourteen degrees south of the Martian equator, or a crater east of the Hesperia Planitia region. The bold precision of this assessment is for me the most stunning surprise dealt by the rock from Mars—even more mind-boggling than the suggestive traces of something that might once have lived and died in its microscopic fissures.

I cannot resist comparing this new intimacy with our solar system to the shoebox diorama of the planets I designed for my grade-school science fair. I used marbles, jack balls, and Ping-Pong balls, all hanging on strings and painted different colors, all inside a box representing our solar system. This crude assortment of materials allowed a reasonable representation of what was known 40 years ago about the nine planets: Mars was red and had two moons; Jupiter dwarfed the other planets (I should have used a basketball but it wouldn’t fit in the box); Saturn had rings. If my school-age daughter were to attempt such a construction today, she’d need handfuls of jelly beans and gum balls to model the newly discovered satellites of the giant planets. She’d want rings around Jupiter, Uranus, Neptune, too, not to mention a moon for Pluto.

Similarly, our solar system, once considered unique, now stands as merely the first known example of a planetary system in our galaxy. Since October of 1995, astronomers at ground-based observatories in Europe and the United States have announced that they’ve found evidence of at least seven alien planets orbiting other stars. As yet, not one of these large planets—some of which are many times the mass of Jupiter—has actually been seen through a telescope; we know about them indirectly through the gravitational effects they exert on their parent stars. Yet, even though we have no picture of what they look like, enough information has been deduced about

their atmospheric conditions to grant the nickname Goldilocks to a planet attending the star 70 Virginis, an appellation suggesting that the cloud-top temperature is “just right,” as the storybook Goldilocks would say, for the presence of liquid water. Liquid water, not known to exist anywhere in our solar system now except on Earth, is thought crucial to biological life; thus, only a short leap of faith is needed to carry hopeful scientists from the presence of water to the existence of extraterrestrial life. To raise the specter of the Mars rock once again, the primitive life-forms that pressed their memory inside it likewise suggest an era when dry-as-dust Mars was a wet world, where rivers flowed.

22. In lines 5-12, the author suggests that the expeditionist’s discovery of the meteorite was surprising primarily because it
- (A) defied scientists’ doubts that such an object could reach Earth
 - (B) occurred after her party had given up any hope of success
 - (C) resulted from a seemingly unlikely sequence of events
 - (D) provided evidence to contradict a long-standing scientific theory
 - (E) led to an unprecedented degree of scrutiny
23. In line 15, “designated” most nearly means
- (A) drawn
 - (B) called
 - (C) stipulated
 - (D) selected
 - (E) allocated
24. The author considers the researchers’ conclusion “bold” (line 24) primarily because it
- (A) daringly offers two conflicting answers to a single question
 - (B) firmly supports a young geologist’s tentative theory
 - (C) confidently uses a small piece of evidence to build an exact hypothesis
 - (D) courageously defies a conventional interpretation of Antarctic evidence
 - (E) defiantly espouses an unpopular theory about comets in our solar system



25. The author uses the phrase “this new intimacy” (line 28) to refer to the
- (A) hands-on quality of the learning experience represented by the shoebox diorama
 - (B) understanding that nonspecialists now have about meteorological phenomena
 - (C) general acceptance of the theory that biological life once existed on Mars
 - (D) increased knowledge that scientists have about our solar system
 - (E) way that events on one planet affect those on another
26. In line 33, “crude” most nearly means
- (A) natural and unaltered
 - (B) rough and inexpert
 - (C) obvious
 - (D) vulgar
 - (E) nonspecific
27. In line 42, the author refers to Pluto’s moon most likely in order to
- (A) illustrate a feature of our solar system discovered since the author’s childhood
 - (B) cite an object too small in scale to have been included in the author’s diorama
 - (C) draw a parallel between it and our own moon
 - (D) contrast the scientific curiosity of today’s children with that of children years ago
 - (E) emphasize the need for a greater commitment to space exploration
28. The reasoning process presented in lines 49-53 (“As . . . stars”) is best described as
- (A) inference based on an untested theory
 - (B) extrapolation from similar situations
 - (C) analysis of a single case by multiple observers
 - (D) hypothesis confirmed by direct observation
 - (E) comparison of theory with physical evidence
29. In lines 53-59 the author refers to the Goldilocks fairy tale (“Yet . . . water”) in order to make which point about a particular planet?
- (A) The planet’s environment may be conducive to a result some scientists are eager to find.
 - (B) The planet’s atmosphere was once thought to be too cold to support biological life.
 - (C) The simple methods astronomers used to discover the features of this planet resemble the explorations of curious children.
 - (D) Scientists’ wishful speculations about the existence of this planet deserve little more credence than a fairy tale.
 - (E) Only after much trial and error did astronomers determine the precise location of this planet.
30. Which of the following, if true, would the “hopeful scientists” (line 62) most likely interpret as evidence of the potential for life on Mars?
- (A) Mars was affected by the same planetary collision that caused the extinction of dinosaurs.
 - (B) Mars had a very mild atmospheric temperature millions of years ago.
 - (C) Mars had a wet environment at one time in the past.
 - (D) The rock that fell from Mars resembled rocks found on the Antarctic ice field.
 - (E) The rock that fell from Mars had very few microscopic fissures.

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.



SECTION 2

Time — 30 minutes

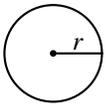
25 Questions

Directions: In this section solve each problem, using any available space on the page for scratchwork. Then decide which is the best of the choices given and fill in the corresponding oval on the answer sheet.

Notes:

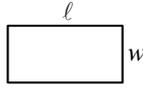
- The use of a calculator is permitted. All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.

Reference Information

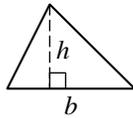


$$A = \pi r^2$$

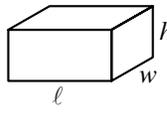
$$C = 2\pi r$$



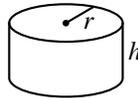
$$A = \ell w$$



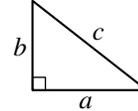
$$A = \frac{1}{2}bh$$



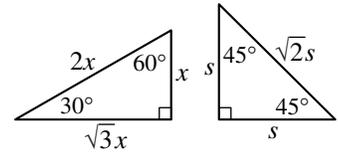
$$V = \ell wh$$



$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



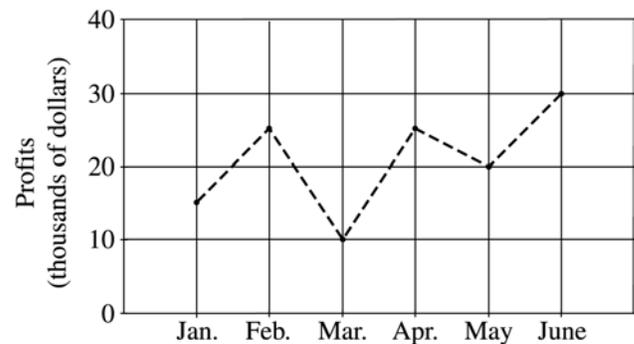
Special Right Triangles

The number of degrees of arc in a circle is 360.
The measure in degrees of a straight angle is 180.
The sum of the measures in degrees of the angles of a triangle is 180.

1. If $2x + 4x + 6x = -24$, then $x =$

- (A) -288
(B) -2
(C) $-\frac{1}{2}$
(D) $\frac{1}{2}$
(E) 2

MONTHLY PROFITS FOR COMPANY XYZ



2. According to the chart above, Company XYZ experienced its largest increase in monthly profits between which two consecutive months?
- (A) January and February
(B) February and March
(C) March and April
(D) April and May
(E) May and June



3. If $7^{10} = 7 \times 7^n$, what is the value of n ?

- (A) 10
(B) 9
(C) 7
(D) 5
(E) 3

4. Each month, a telephone service charges a base rate of \$10.00 and an additional \$0.08 per call for the first 40 calls and \$0.04 for every call after that. How much does the telephone service charge for a month in which 50 calls are made?

- (A) \$12.20
(B) \$12.80
(C) \$13.60
(D) \$14.40
(E) \$17.60

5. If 7.5 is x percent of 75, what is x percent of 10?

- (A) 10
(B) 1
(C) 0.75
(D) 0.1
(E) 0.075

1 cup = 8 ounces
10 ounces = 60 teaspoons

6. Based on the information above, how many teaspoons are equivalent to $\frac{1}{4}$ cup?

- (A) 12
(B) 10
(C) 8
(D) 6
(E) 4

<i>E</i>			0		3
<i>F</i>			0		2
<i>G</i>			0		0
<i>H</i>			0		1
	1	3	0	2	

7. Each square in the grid above is to be filled with either 1 or 0. Each number to the right of the grid is the sum of the numbers in the row to its left, and each number below the grid is the sum of the numbers in the column above it. For example, there is a 0 below the third column because the sum of the numbers in that column is 0. When the 0's and 1's are all entered correctly into the grid, what will row *F* be?

(A) *F*

1	1	0	0
---	---	---	---

(B) *F*

1	0	1	0
---	---	---	---

(C) *F*

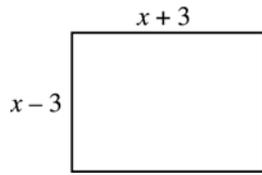
0	1	1	0
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(D) *F*

1	0	0	1
---	---	---	---

(E) *F*

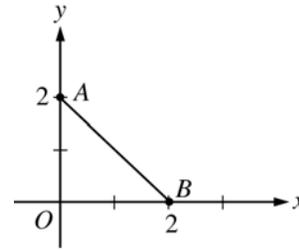
0	1	0	1
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8. If the perimeter of the rectangle above is 72, what is the value of x ?
- (A) 9
(B) 15
(C) 18
(D) 21
(E) 36

9. For which of the following lists of 7 numbers is the average (arithmetic mean) less than the median?
- (A) 1, 2, 3, 8, 9, 10, 11
(B) 3, 4, 5, 8, 11, 12, 13
(C) 5, 5, 5, 8, 11, 11, 11
(D) 5, 6, 7, 8, 9, 10, 11
(E) 5, 6, 7, 8, 9, 10, 20

10. Wayne would like to buy a school jacket priced at \$81, but the price of the jacket is \$59 more than he has. In which of the following equations does x represent the number of dollars Wayne has?
- (A) $x + 81 = 59$
(B) $x - 81 = 59$
(C) $x - 59 = -81$
(D) $x - 81 = -59$
(E) $x - 59 = 81$



11. In the figure above, line ℓ (not shown) is perpendicular to segment AB and bisects segment AB . Which of the following points lies on line ℓ ?
- (A) (0, 2)
(B) (1, 3)
(C) (3, 1)
(D) (3, 3)
(E) (3, 6)

12. If $(m - 1)(1 - k) = 0$, which of the following can be true?
- I. $m = 1$
II. $k = 1$
III. $m = k$
- (A) None
(B) I only
(C) II only
(D) I and II only
(E) I, II, and III



13. What is the radius of a circle whose circumference is π ?

(A) $\frac{1}{2}$
 (B) 1
 (C) 2
 (D) π
 (E) 2π

14. On a map, the length of the road from Town A to Town B is measured to be 12 inches. On this map, $\frac{3}{4}$ inch represents an actual distance of 8 miles. What is the actual distance, in miles, from Town A to Town B along this road?

(A) 128
 (B) 102
 (C) 96
 (D) 90
 (E) 72

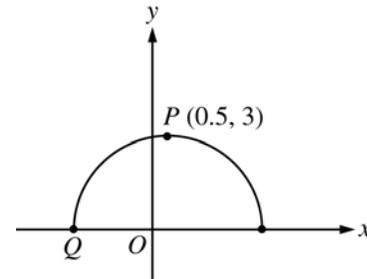
$$\begin{array}{r} R \ 2 \ R \\ + \ 6 \ T \ 9 \\ \hline T \ R \ 0 \end{array}$$

15. In the addition of two 3-digit numbers above, R and T represent two different digits and the units digit of the answer is zero. What digit does T represent?

(A) 1
 (B) 6
 (C) 7
 (D) 8
 (E) 9

16. How many of the prime factors of 30 are greater than 2?

(A) One
 (B) Two
 (C) Three
 (D) Four
 (E) Five



17. Point P is the point with the greatest y -coordinate on the semicircle shown above. What is the x -coordinate of point Q ?

(A) -3.5
 (B) -3
 (C) -2.5
 (D) -2
 (E) -1.5

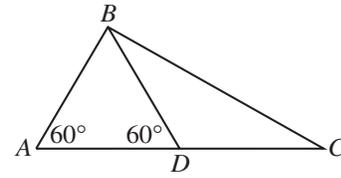
 $a, 2a, b$

18. If the average (arithmetic mean) of the 3 numbers above is $2a$, what is b in terms of a ?

(A) a
 (B) $\frac{3}{2}a$
 (C) $2a$
 (D) $\frac{5}{2}a$
 (E) $3a$

19. The ratio of a to b is 2 to 3, where a and b are positive. If x equals a increased by 50 percent of a and y equals b decreased by 50 percent of b , what is the value of $\frac{x}{y}$?

(A) $\frac{1}{3}$
 (B) $\frac{2}{3}$
 (C) 1
 (D) $\frac{3}{2}$
 (E) 2

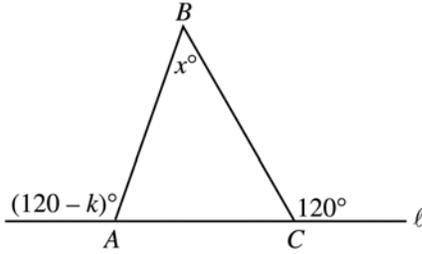


20. In $\triangle ABC$ above, the length of AB is 3, and D is the midpoint of AC . What is the length of BC ?

(A) $3\sqrt{3}$ (approximately 5.20)
 (B) $4\sqrt{2}$ (approximately 5.66)
 (C) $4\sqrt{3}$ (approximately 6.93)
 (D) $6\sqrt{2}$ (approximately 8.49)
 (E) $5\sqrt{3}$ (approximately 8.66)

21. A garden has r parallel rows of plants, with 5 plants in each row. If x plants are added to each row, how many plants will then be in the garden, in terms of r and x ?

(A) $5rx$
 (B) $5r + x$
 (C) $5r + rx$
 (D) $5r + 5x$
 (E) $r + 5 + x$



Note: Figure not drawn to scale.

22. In the figure above, side AC of $\triangle ABC$ is on line ℓ . What is x in terms of k ?
- (A) $60 - k$
 (B) k
 (C) $60 + k$
 (D) $120 - k$
 (E) $120 - 2k$
-
23. Three lines are drawn in a plane so that there are exactly three different intersection points. Into how many nonoverlapping regions do these lines divide the plane?
- (A) Three
 (B) Four
 (C) Five
 (D) Six
 (E) Seven
-
24. For all values of y , let $y \star$ be defined by $y \star = y^2 - 1$. Which of the following is equal to $(y \star) \star$?
- (A) $y^4 - 1$
 (B) $y^4 - y^2 - 1$
 (C) $y^4 + y^2 - 1$
 (D) $y^4 - 2y^2$
 (E) $y^4 - 2y^2 + 1$
-
25. A club is buying boxes of candy bars to sell for a fundraiser. If each box contains c candy bars, and each member sells x bars each day, how many boxes are needed to supply enough candy bars for $3c$ members to sell for 5 days?
- (A) $15c^2x$
 (B) $\frac{x}{15}$
 (C) $\frac{3x}{5}$
 (D) $\frac{15c^2}{x}$
 (E) $15x$

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 3

Time — 30 minutes

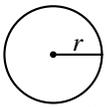
25 Questions

Directions: This section contains two types of questions. You have 30 minutes to complete both types. You may use any available space for scratchwork.

Notes:

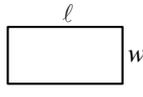
- The use of a calculator is permitted. All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.

Reference Information

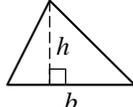


$$A = \pi r^2$$

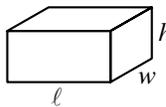
$$C = 2\pi r$$



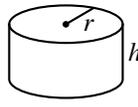
$$A = \ell w$$



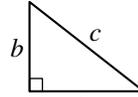
$$A = \frac{1}{2}bh$$



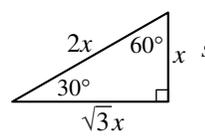
$$V = \ell wh$$



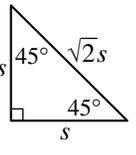
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.
The measure in degrees of a straight angle is 180.
The sum of the measures in degrees of the angles of a triangle is 180.

Directions for Quantitative Comparison Questions

Questions 1-15 each consist of two quantities in boxes, one in Column A and one in Column B. You are to compare the two quantities and on the answer sheet fill in oval

- A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

AN E RESPONSE WILL NOT BE SCORED.

Notes:

- In some questions, information is given about one or both of the quantities to be compared. In such cases, the given information is centered above the two columns and is not boxed.
- In a given question, a symbol that appears in both columns represents the same thing in Column A as it does in Column B.
- Letters such as x , n , and k stand for real numbers.

EXAMPLES**Column A****Column B****Answers****E1**5²

20

 (A)
 (B)
 (C)
 (D)
 (E)
E2 x

30

 (A)
 (B)
 (C)
 (D)
 (E)
E3 $r + 1$ $s - 1$
 (A)
 (B)
 (C)
 (D)
 (E)

GO ON TO THE NEXT PAGE

SUMMARY DIRECTIONS FOR COMPARISON QUESTIONS

Answer: **A** if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A

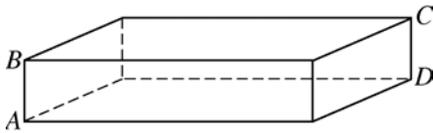
Column B

 t is negative.

1.

$$\frac{1}{t}$$

$$1 - t$$



The figure above is a rectangular solid.

2.

The distance from
 A to C The distance from
 B to D $a \neq 0$

3.

$$a \times a$$

$$a + (-a)$$

A person is going to pick a marble at random from a bag containing 8 red marbles, 6 white marbles, 2 blue marbles, and no other marbles.

4.

The probability that
the marble picked will
be redThe probability that
the marble picked will
be white or blue

Column A

Column B

Point O is the center of a circle. Point P is inside the circle, and point M is outside the circle.

5.

The length of OP The length of PM

At a book sale, 300 people each bought at least 1 book. A total of 350 books were sold.

6.

The number of people
who each bought more
than 1 book

51

$$t = (2y \times 10^3) + (3y \times 10^3)$$

$$y > 0$$

7.

$$t$$

$$5y \times 10^3$$

$n^2 > 10$, and n is a positive integer.

8.

$$n^3$$

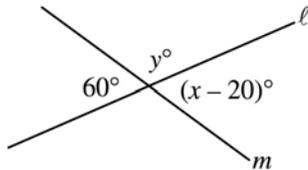
50

SUMMARY DIRECTIONS FOR COMPARISON QUESTIONS

Answer: **A** if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Column A

Column B



9.

10.

For all positive integers n , let $\lceil n \rceil = n$ if n is odd,
and let $\lceil n \rceil = n + 1$ if n is even.

11.

$$\begin{aligned} x - y &= 7 \\ x - z &< 7 \end{aligned}$$

12.

Column A

Column B

n is a positive integer.

13.

$(r + p)25 = rx + py$ for all values of r and p .

14.

$h > 1$

15.

Directions for Student-Produced Response Questions

Each of the remaining 10 questions requires you to solve the problem and enter your answer by marking the ovals in the special grid, as shown in the examples below.

Answer: $\frac{7}{12}$ or $7/12$

Write answer in boxes. →

Grid in result. →

← Fraction line

← Decimal point

Answer: 2.5

Answer: 201
Either position is correct.

Note: You may start your answers in any column, space permitting. Columns not needed should be left blank.

- Mark no more than one oval in any column.
 - Because the answer sheet will be machine-scored, **you will receive credit only if the ovals are filled in correctly.**
 - Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the ovals accurately.
 - Some problems may have more than one correct answer. In such cases, grid only one answer.
 - No question has a negative answer.
 - **Mixed numbers** such as $2\frac{1}{2}$ must be gridded as 2.5 or $5/2$. (If $\frac{21}{2}$ is gridded, it will be interpreted as $\frac{21}{2}$, not $2\frac{1}{2}$.)
 - **Decimal Accuracy:** If you obtain a decimal answer, **enter the most accurate value the grid will accommodate.** For example, if you obtain an answer such as $0.6666\dots$, you should record the result as $.666$ or $.667$. **Less accurate values such as $.66$ or $.67$ are not acceptable.**
- Acceptable ways to grid $\frac{2}{3} = .6666\dots$
-

16. How many $\frac{1}{4}$ -pound sticks of butter together weigh as much as 25 pounds of butter?

17. If $\frac{(5 + 2)m + 3}{4} = 6$, what is the value of m ?

18. In isosceles triangle ABC , the measure of angle A is 80° . If another angle of the triangle measures x° , where $x \neq 80$, what is one possible value of x ?

19. Of 650 cities surveyed, each city had an art museum, or a nature museum, or both. Of the 320 cities that had art museums, $\frac{1}{4}$ also had nature museums. What is the total number of cities surveyed that had nature museums?

A	B
D	C

20. In the figure above, the lengths and widths of rectangles A , B , C , and D are whole numbers. The areas of rectangles A , B , and C are 35, 45, and 36, respectively. What is the area of the entire figure?

WHERE DO TWELFTH GRADERS
USE COMPUTERS?

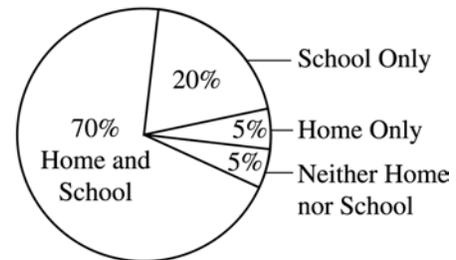


Figure 1

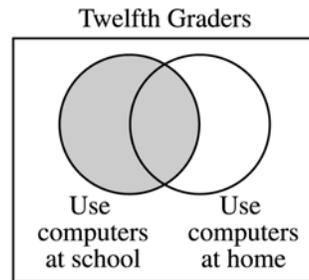


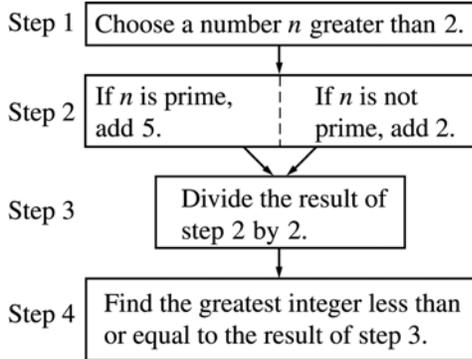
Figure 2

Note: Figure 2 not drawn to scale.

21. The Lyndhurst High School twelfth graders are represented in the circle graph in Figure 1. Figure 2 is another way to illustrate the use of computers by these twelfth graders. If the same 200 twelfth graders are represented in both figures, what is the total number of twelfth graders represented by the shaded circle in Figure 2?

22. In an art class, there were just enough staplers, rulers and glue bottles so that every 2 students had to share a stapler, every 3 students had to share a ruler, and every 4 students had to share a glue bottle. If the sum of the number of staplers, rulers, and glue bottles used by the class was 65, how many students were in the class?

24. Two numbers have the property that their sum is equal to their product. If one of the numbers is 6, what is the other number?



23. In the chart above, if the number n chosen in step 1 is 39, what number will be the result of step 4?

25. How many positive integers less than 1,000 are multiples of 5 and are equal to 3 times an even integer?

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.



SECTION 4
Time — 30 minutes
35 Questions

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding oval on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Medieval kingdoms did not become constitutional republics overnight; on the contrary, the change was -----.

- (A) unpopular (B) unexpected
(C) advantageous (D) sufficient
(E) gradual

(A) (B) (C) (D)

1. Originally ----- mainly by young, urban audiences, rap music was ultimately ----- by its appreciative listeners of all ages across the country.
 - (A) admired . . embraced
 - (B) performed . . condemned
 - (C) derided . . ignored
 - (D) appropriated . . relinquished
 - (E) applauded . . instigated
2. It was out of ----- that Professor Green, the author of several highly respected books in his field, described himself to his colleagues as -----.
 - (A) embarrassment . . a paragon
 - (B) magnanimity . . an avenger
 - (C) insolence . . a pedant
 - (D) egotism . . an apprentice
 - (E) modesty . . a dilettante
3. The ----- experiences of Madonna Swan, the 1983 North American Indian Woman of the Year, cannot be fully appreciated if they are ----- in a tidy summary.
 - (A) varied . . interposed
 - (B) diverse . . condensed
 - (C) profound . . magnified
 - (D) transformative . . embellished
 - (E) impressive . . immersed
4. The representative was a traditionalist, reluctant to support any legislation inconsistent with the nation's most ----- principles.
 - (A) orthodox (B) impassioned (C) precarious
 - (D) impressionable (E) indeterminate
5. Historian Carlo Botta often contradicted himself, as when he first championed and then ----- the ideals of the French Revolution.
 - (A) invoked (B) investigated (C) conceived
 - (D) coveted (E) denounced
6. The author constructed a scenario in which playful, creative children are rewarded for their ----- and strict, dour adults are punished for their -----.
 - (A) spontaneity . . rigidity
 - (B) digressions . . mirth
 - (C) solemnity . . malice
 - (D) inflexibility . . rigor
 - (E) improvisations . . buoyancy
7. Although usually warm and ----- in greeting friends, Lauren was too reserved ever to be truly -----.
 - (A) joyous . . conventional
 - (B) cordial . . effusive
 - (C) restrained . . gracious
 - (D) dismissive . . ebullient
 - (E) genial . . antisocial
8. Legal scholars argue that when "justice" is interpreted too broadly, the concept becomes -----, easily changed and controlled by outside forces.
 - (A) malleable (B) influential (C) coherent
 - (D) felicitous (E) prosaic
9. The instructor's voice was so ----- that most students preferred taking a test to listening to its grating sound.
 - (A) receptive (B) cajoling (C) melodious
 - (D) muted (E) strident
10. Though surgeon and researcher Charles Drew never enjoyed celebrity, he truly deserves to be ----- for his life's achievements.
 - (A) mollified (B) lionized (C) accosted
 - (D) galvanized (E) vilified



Each question below consists of a related pair of words or phrases, followed by five pairs of words or phrases labeled A through E. Select the pair that best expresses a relationship similar to that expressed in the original pair.

Example:

CRUMB : BREAD ::

- (A) ounce : unit
- (B) splinter : wood
- (C) water : bucket
- (D) twine : rope
- (E) cream : butter

(A) (B) (C) (D) (E)

11. BOTTLE : CONTAINER ::

- (A) door : room
- (B) well : bottom
- (C) knife : tool
- (D) beaker : fluid
- (E) medicine : dose

12. KELP : OCEAN ::

- (A) cactus : desert
- (B) alga : plant
- (C) spider : web
- (D) surf : beach
- (E) avalanche : snow

13. BEES : HONEY ::

- (A) moth : flame
- (B) fish : bait
- (C) birds : feathers
- (D) sheep : herd
- (E) spiders : webs

14. COAT : BODY ::

- (A) bracelet : wrist
- (B) uniform : team
- (C) mitten : hand
- (D) shirt : sleeve
- (E) bandage : cut

15. LION : PRIDE ::

- (A) hawk : prey
- (B) whale : mammal
- (C) parrot : jungle
- (D) sheepdog : flock
- (E) wolf : pack

16. ERRATIC : CONSISTENCY ::

- (A) lethargic : energy
- (B) eccentric : oddity
- (C) spellbound : charm
- (D) scintillating : conversation
- (E) feverish : delirium

17. DEFOLIATION : LEAVES ::

- (A) contamination : germs
- (B) evaporation : dryness
- (C) delimitation : boundaries
- (D) acceleration : speed
- (E) dehydration : moisture

18. DEBACLE : FAILURE ::

- (A) catastrophe : assistance
- (B) impediment : progress
- (C) chaos : confusion
- (D) indecisiveness : action
- (E) anarchy : order

19. GRIMACE : PAIN ::

- (A) applause : praise
- (B) inquiry : curiosity
- (C) sneer : contempt
- (D) gesture : offense
- (E) hug : affection

20. EPIC : HEROIC ::

- (A) euphony : discordant
- (B) prose : theatrical
- (C) melodrama : exaggerated
- (D) instrument : harmonious
- (E) satire : hypocritical

21. PROTAGONIST : NOVEL ::

- (A) contributor : anthology
- (B) editor : newspaper
- (C) reviewer : movie
- (D) subject : biography
- (E) narrator : anecdote

22. LABYRINTH : PERPLEXITY ::

- (A) prison : liberty
- (B) harbor : navigation
- (C) refuge : relief
- (D) lair : danger
- (E) mirage : image

23. FOIBLE : VICE ::

- (A) frugality : generosity
- (B) obsession : persistence
- (C) venom : malevolence
- (D) oath : loyalty
- (E) fib : lie



The two passages below are followed by questions based on their content and on the relationship between the two passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 24-35 are based on the following passages.

Is a person's gender an important influence on how he or she behaves with others? Contemporary sociologists and other scholars have argued this question fiercely. The following pair of passages presents two contrasting voices from that debate.

Passage 1

The desire to affirm that women and men are completely equal has made some scholars reluctant to show ways in which they are different, because differences between two groups of people have so often been used to “justify” unequal treatment and opportunity. Much as I understand and am in sympathy with those who wish there were no differences between women and men—only reparable social injustice—my research on styles of conversation tells me that, at least in this area, it simply isn’t so. I believe that there *are* gender differences in ways of speaking, and we need to identify and understand them. Without such understanding, we are doomed to blame others or ourselves—or our own relationships—for the otherwise mystifying and damaging effects of our contrasting conversational styles.

It is clear to me that recognizing gender differences in conversational styles would free individuals from the burden of an inappropriate sense of being at fault for chronic disagreements. Many women and men feel dissatisfied with their close relationships—with spouses, siblings, parents—and become even more frustrated when they try to talk things out. Taking a *sociolinguistic* approach to such troubling encounters makes it possible to explain these dissatisfactions without accusing anyone of being wrong and without blaming—or discarding—the relationship.

The sociolinguistic approach I take in my work is based on my belief that many frictions arise because, here in the United States, boys and girls grow up in what are essentially different cultures, so that talk between women and men is actually cross-cultural communication. For little boys, talk is primarily a means of making statements of achievement through games like bragging contests. This may also be done by exhibiting knowledge or skill and by holding center stage through such verbal performance as storytelling, joking, or imparting information. Little girls appear to be eager to share and compare interests and ideas. Emphasis is placed on displaying similarities and matching experiences. For them, the language of conversation is primarily a language of rapport: a way of establishing connection and negotiating relationships. So this view of children’s behavior predicts that more women than men will be comfortable speaking one-on-one, to individuals. And even when addressing an audience, women may be more concerned than men with establishing rapport.

Passage 2

Gender stereotypes should concern us for several reasons. First, they may dictate what we notice and bias our perceptions in the direction of expectation. Some researchers attempt to elucidate gender differences in order to help women and men understand and respond to one another better. In the process, however, their work encourages people to notice and attend to differences rather than similarities, to perceive men and women in accordance with stereotypes that may not accurately depict their behavior or intentions. Second, gender stereotypes may not only describe behavior but also prescribe it, dictating how men and women “should” behave. People begin to act in ways that support other people’s gender-role expectations of them.

It is time to rethink our understanding of gender, to move away from the notion that men and women have two contrasting styles of interaction that were acquired in childhood. We need to move from a conceptualization of gender as an attribute or style of behavior to an understanding of gender as something people do in social interaction. As a noted scholar proposes, “None of us is feminine or is masculine or fails to be either of those. In particular contexts people do feminine, in others, they do masculine.” People display contradictory behaviors as they encounter different social norms and pressures.

Some researchers view male-female conversations as cross-cultural communication. The two-cultures approach postulates that difficulties in communication between men and women arise because of a clash of conversational styles. But this approach has a number of limitations. First, the coherence of male and female subcultures in childhood has been exaggerated. We arrive at a contrasting picture of the cultures of boys and girls only by singling out those children who fit common gender stereotypes and marginalizing others. We fail to notice the children who do not fit those stereotypes—for example, boys who excel at caring for younger siblings or girls who enjoy building things in shop class. Second, although children may choose same-sex playmates as preferred partners, they interact daily inside and outside school with the opposite sex. Children have countless experiences communicating with people of both sexes: they do not learn to communicate in gender-segregated worlds. They learn to display different styles of interaction in different contexts: they do not learn a single gender-related style. The same child may display dominance and give orders to a younger playmate but show deference and follow orders from an older friend.



24. The primary purpose of Passage 1 is to
- (A) present a historical overview of a controversy
 - (B) acknowledge previous errors in thinking
 - (C) urge changes in organized activities provided for children
 - (D) assert the value of a particular approach to an issue
 - (E) downplay the significance of a recent discovery
25. Passage 1 makes which suggestion about the work of “some scholars” (line 2) ?
- (A) It will become widely accepted in the scientific community.
 - (B) It is well intentioned but misguided.
 - (C) It attempts to be objective but does not succeed.
 - (D) It puts forth a convincing theory.
 - (E) It could be used to excuse injustice in a society.
26. Passage 1 argues that “recognizing gender differences” (line 16) would most likely
- (A) cause people to exaggerate their similarities when communicating with one another
 - (B) lead to further dissatisfaction in conversations among friends and relatives
 - (C) promote the equal treatment of distinct social groups
 - (D) relieve individuals of much of the blame for problems in relationships
 - (E) affect the way that future research on gender is conducted
27. In lines 36-41 (“Little girls . . . relationships”), the author of Passage 1 assumes that for girls, a primary function of communication is to
- (A) foster a sense of intimacy between speaker and listener
 - (B) establish a set of conversational rules shared by speaker and listener
 - (C) convey information previously unknown by the listener
 - (D) promote nostalgic feelings about past friendships
 - (E) create an objective atmosphere for personal discussions
28. The sentence in lines 47-48 in Passage 2 (“First . . . expectation”) primarily emphasizes which damaging effect of gender stereotypes?
- (A) They may offend the person being stereotyped.
 - (B) They may distort our observations of people we meet.
 - (C) They have been used to justify gender inequality.
 - (D) They commonly cause miscommunication between men and women.
 - (E) They reflect negatively on those who believe in them.
29. The quotation in lines 66-69 (“None . . . masculine”) primarily serves to
- (A) introduce a personal experience
 - (B) provide a typical example
 - (C) elaborate on an idea
 - (D) signal a change in topic
 - (E) offer recent research data
30. Passage 2 suggests that some scholars construct “a contrasting picture of the cultures of boys and girls” (lines 77-78) by studying children whose
- (A) readiness to interact with strangers is apparent
 - (B) demand for approval from adults is particularly strong
 - (C) rebellion against authority results in creative behavior
 - (D) personalities are highly idiosyncratic
 - (E) actions correspond to a narrow preconception of behavior
31. The author of Passage 2 implies that the “boys” mentioned in line 81 and the “child” mentioned in line 90 resemble one another in that they
- (A) have not learned to imitate adult behaviors
 - (B) refuse to get along with their peers
 - (C) do not conform to traditional gender stereotypes
 - (D) openly mock adult expectations about their behavior
 - (E) communicate primarily with children of their own gender



32. The author of Passage 2 would most likely challenge the claim made in lines 27-31 of Passage 1 (“The sociolinguistic . . . communication”) by arguing that
- (A) children do not grow up in single-gender cultures
 - (B) children may become skilled at deceiving adults
 - (C) gender differences are impossible to assess scientifically
 - (D) there is less conflict between men and women than sociologists assume
 - (E) children’s behaviors have changed dramatically in recent years
33. The two passages differ most on which topic?
- (A) Whether boys and girls communicate in gender specific patterns
 - (B) Whether important social behavior is learned in childhood
 - (C) Whether adult conversational styles can be studied systematically
 - (D) Whether gender plays a role in determining a child’s playtime activities
 - (E) Whether society concerns itself with the concept of gender roles
34. The assumptions underlying the research work described in lines 48-51 of Passage 2 are most similar to the assumptions held by the
- (A) “scholars” in line 2
 - (B) “women and men” in line 19
 - (C) “noted scholar” in line 66
 - (D) author of Passage 1
 - (E) author of Passage 2
35. Which of the following best characterizes the ideas about gender communication styles as they are presented in the two passages?
- (A) Passage 1 argues that styles are based on competition, while Passage 2 suggests that they are a form of cooperation.
 - (B) Passage 1 argues that styles are a burden, while Passage 2 implies that they can help facilitate relationships between men and women.
 - (C) Passage 1 claims that styles are semantic, while Passage 2 suggests that they are whimsical.
 - (D) Passage 1 suggests that styles are constant, while Passage 2 argues that they are fluid.
 - (E) Passage 1 states that styles are random, while Passage 2 indicates that their patterns become obvious upon closer scrutiny.

STOP

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**



SECTION 6

Time — 15 minutes

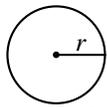
10 Questions

Directions: In this section solve each problem, using any available space on the page for scratchwork. Then decide which is the best of the choices given and fill in the corresponding oval on the answer sheet.

Notes:

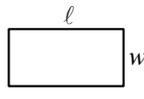
- The use of a calculator is permitted. All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.

Reference Information

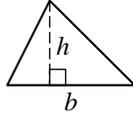


$$A = \pi r^2$$

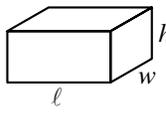
$$C = 2\pi r$$



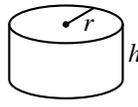
$$A = \ell w$$



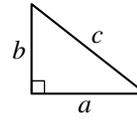
$$A = \frac{1}{2}bh$$



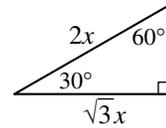
$$V = \ell wh$$



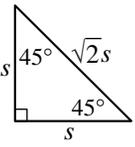
$$V = \pi r^2 h$$



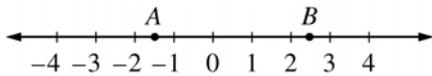
$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.
The measure in degrees of a straight angle is 180.
The sum of the measures in degrees of the angles of a triangle is 180.

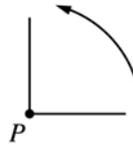


1. Which of the following is the best estimate of the length of segment AB on the number line above?

(A) 4
(B) 3.5
(C) 3
(D) 1.5
(E) 1

2. For every 8,000 lawn mowers produced by a lawn mower factory, exactly 6 are defective. At this rate, how many lawn mowers were produced during a period in which exactly 15 lawn mowers were defective?

(A) 800
(B) 8,000
(C) 12,000
(D) 20,000
(E) 24,000



3. The figure above will be rotated 90° about point P in the direction indicated. Which of the following represents the rotated figure?

(A)



(B)



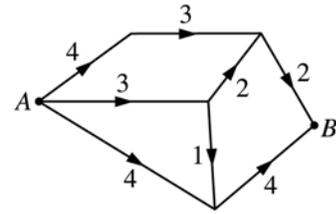
(C)



(D)



(E)



Note: Figure not drawn to scale.

4. In the diagram of roads above, the numbers represent road distances in miles, and the arrows show the only directions in which travel is permitted on the roads. If the length of the longest route from A to B is ℓ miles, and if the length of the shortest route from A to B is s miles, then $\ell - s =$
- (A) 9
(B) 8
(C) 7
(D) 3
(E) 2

5. If $a^2 = b^{10}c^8$, and if a , b , and c are positive numbers, then $a =$

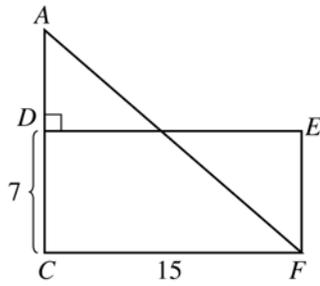
(A) $\frac{b^{10}c^8}{2}$

(B) b^5c^8

(C) $\frac{b^5c^8}{2}$

(D) b^5c^4

(E) $\frac{b^5c^4}{2}$



Note: Figure not drawn to scale.

6. In the figure above, if the area of triangle CAF is equal to the area of rectangle $CDEF$, what is the length of segment AD ?
- (A) $\frac{7}{2}$
 (B) 5
 (C) 7
 (D) $\frac{15}{2}$
 (E) 15

7. Six points are placed on a circle. What is the greatest number of different lines that can be drawn so that each line passes through two of these points?
- (A) 12
 (B) 15
 (C) 25
 (D) 30
 (E) 36

$$y, 2y + 7, y + 6, \dots$$

8. In the increasing sequence above, the first term is y and the difference between any two consecutive terms is 3. What is the value of the fourth term in the sequence?
- (A) -4
 (B) 2
 (C) 5
 (D) 13
 (E) 19



9. If q and r are positive numbers, what percent of $(q + 1)$ is r ?

(A) $\frac{1}{100r(q + 1)}\%$

(B) $\frac{q + 1}{100r}\%$

(C) $\frac{100(q + 1)}{r}\%$

(D) $\left(\frac{100r}{q} + 1\right)\%$

(E) $\frac{100r}{q + 1}\%$

10. If three different circles are drawn on a piece of paper, at most how many points can be common to all three?

(A) None

(B) One

(C) Two

(D) Three

(E) Six

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 7
Time — 15 minutes
13 Questions

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding oval on the answer sheet.

The passage below is followed by questions based on its content. Answer the questions on the basis of what is stated or implied in the passage and in any introductory material that may be provided.

Questions 1-13 are based on the following passage.

The passage below is from a 1991 autobiography that focuses on an African American woman's adolescent experiences at a prestigious boarding school. The passage describes one part of a meeting of parents, admissions officers, and prospective students. The story the mother recounts at this meeting took place in 1965.

My mother began to tell a story about a science award I had won in third grade. She started with the winning—the long, white staircase in the auditorium, and how the announcer called my name twice because we were way at the back and it took me so long to get down those steps. Mama's eyes glowed. She was a born raconteur, able to increase the intensity of her own presence and fill the room. She was also a woman who seldom found new audiences for her anecdotes, so she made herself happy, she insisted, with us children, her mother, her sisters, her grandparents—an entire clan of storytellers competing for a turn on the family stage. This time all eyes were on my mother. Her body, brown and plump and smooth, was shot through with energy. This time the story had a purpose. She told them how my science experiment almost did not get considered in the citywide competition. My third-grade teacher, angry that I'd forgotten to bring a large box for displaying and storing the experiment, made me pack it up to take home. (Our teacher had told us that the boxes were needed to carry the experiments from our class to the exhibition room, and she'd emphasized that she would not be responsible for finding thirty boxes on the day of the fair. Without a box, the experiment would have to go home. Other kids, White kids, had forgotten boxes during the week. They'd brought boxes the next day. I asked for the same dispensation, but was denied. The next day was the fair, she said. That was different.) I came out of school carrying the pieces of an experiment my father had picked out for me from a textbook. This was a simple buoyancy experiment where I weighed each object in the air and then in water, to prove they weighed less in water. I had with me the scale, a brick, a piece of wood, a bucket, and a carefully lettered poster. Well, my mother marched me and my armload of buoyant materials right back into school and caught the teacher before she left. The box was the only problem? Just the box? Nothing wrong with the experiment? An excited eight year old had forgotten a lousy, stinking box that you can get from the supermarket and for that, she

was out of the running? The teacher said I had to learn to follow directions. My mother argued that I had followed directions by doing the experiment by myself, which was more than you could say for third graders who'd brought dry-cell batteries that lit light bulbs and papier-mâché volcanoes that belched colored lava. "Don't you ever put me in a position like that again," Mama said when we were out of earshot of the classroom. "You never know who is just waiting for an excuse to shut us out." We got the box; my experiment went into the fair; I won the prize at school. I won third prize for my age group in the city. When Mama finished her story, my ears began to burn. I could not help but believe that they would see through this transparent plug, and before I had even laid hands on an application. They'd think we were forward and pushy. I forgot, for the moment, how relieved I'd felt when Mama had stood in front of that teacher defending me with a blinding sense of purpose, letting the teacher know that I was not as small and Black and alone as I seemed, that I came from somewhere, and where I came from, she'd better believe, somebody was home. The other mothers nodded approvingly. My father gave me a wide, clever-girl smile. The officials from the school looked at me deadpan. They seemed amused by my embarrassment. The story was an answer (part rebuke and part condescendence) to the school stories that the admissions people told, where no parents figured at all. It was a message about her maternal concerns, and a way to prove that racism was not some vanquished enemy, but a real, live person, up in your face, ready, for no apparent reason, to mess with your kid. When I was in third grade, Mama could do her maternal duty and face down a White teacher who would have deprived me of an award. Who at this new school would stand up for her child in her stead?

1. In line 11, “competing” portrays the members of the author’s family as
 - (A) vying for the mother’s attention
 - (B) feeling eager to tell their own stories
 - (C) taking issue with each other over household duties
 - (D) selectively sharing information about their experiences
 - (E) comparing educational accomplishments
2. The third paragraph (lines 15-27) presents the author’s third-grade teacher as being primarily
 - (A) critical of the author’s grandiose ambitions
 - (B) disillusioned about her students’ lack of interest in science
 - (C) concerned that children would never develop a sense of decorum
 - (D) arbitrary in implementing rules affecting the class
 - (E) bitter and outspoken about injustices in her school district
3. In line 26, “dispensation” refers to permission for the author to
 - (A) have an additional day to complete the experiment
 - (B) bring a container for her experiment the next day
 - (C) ask her father to help her design the display
 - (D) leave school early to look for a box
 - (E) discuss her experiment with the other children
4. The child most likely intended to use the “bucket” (line 33) as
 - (A) an object to counterbalance the weight of another object
 - (B) a means of steadying the scale in the experiment
 - (C) a container to carry the other materials for the project
 - (D) a receptacle for the water used in the experiment
 - (E) a way of transporting liquid from place to place
5. Lines 34-36 (“Well . . . left”) portray the mother’s attitude of
 - (A) sudden bewilderment
 - (B) weary disappointment
 - (C) protective generosity
 - (D) overwhelming dismay
 - (E) righteous indignation
6. The mother most probably intended the questions in lines 36-40 to
 - (A) underscore the absurdity of the teacher’s position
 - (B) request clarification from the child about the incident
 - (C) express concern over her daughter’s forgetfulness
 - (D) lessen the child’s preoccupation with how her project would be received
 - (E) help herself understand her child’s defensiveness about the box issue
7. Between the mention of a hypothetical “box” in line 23 and its characterization in line 38, the box has changed from a
 - (A) requirement to something that is no longer needed
 - (B) necessity to something that has little inherent value
 - (C) diversion to something that requires a desperate search
 - (D) tool to something that is a source of entertainment
 - (E) puzzle to something that provides clarity and strength
8. In line 55, the author uses the word “plug” primarily to emphasize her feeling that
 - (A) the conversational void was nearly intolerable
 - (B) the boarding school had been highly overrated
 - (C) her mother had gone too far in promoting her
 - (D) her mother’s words and actions were entirely at odds
 - (E) the interviewers’ praise would prove to be insincere
9. In line 59, “blinding” suggests all of the following EXCEPT
 - (A) unswerving
 - (B) dazzling
 - (C) overpowering
 - (D) determined
 - (E) sudden

10. The phrase “somebody was home” (line 62) captures the mother’s
- (A) desire to create a comfortable life for her family
 - (B) eagerness to learn the results of the interview
 - (C) despair over the unfairness of the teacher’s instructions
 - (D) need to capture everyone’s full attention
 - (E) sense of responsibility toward her daughter
11. The details presented in lines 63-66 primarily serve to
- (A) illustrate the various reactions to the mother’s story
 - (B) satirize the pomposity of the school officials
 - (C) emphasize the sense of unity among parents of prospective students
 - (D) convey a sense of unease
 - (E) clarify a preceding statement
12. The final paragraph presents the author’s assessment of her mother’s story as a
- (A) pronouncement about forgiveness and understanding
 - (B) lesson and forewarning for school officials
 - (C) personal argument for the importance of hard work
 - (D) defense of a theory about social attitudes
 - (E) parting message to her daughter
13. A central purpose of the passage is to
- (A) illustrate the character of the author’s mother
 - (B) portray the admissions process for boarding schools at that time
 - (C) show the author’s repressed hostility toward her mother
 - (D) comment on examples of racism in the United States
 - (E) reveal how the author became skeptical of human nature

S T O P

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**

Correct Answers and Difficulty Levels

Form Codes XD, XR

VERBAL						MATHEMATICAL											
Section 1			Section 4			Section 7			Section 2			Section 3			Section 6		
Five-choice Questions			Five-choice Questions			Five-choice Questions			Five-choice Questions			Four-choice Questions			Five-choice Questions		
COR. DIFF.			COR. DIFF.			COR. DIFF.			COR. DIFF.			COR. DIFF.			COR. DIFF.		
ANS.	LEV.		ANS.	LEV.		ANS.	LEV.		ANS.	LEV.		ANS.	LEV.		ANS.	LEV.	
1.	E	1	1.	A	1	1.	B	2	1.	B	1	1.	B	2	1.	A	1
2.	C	1	2.	E	3	2.	D	3	2.	C	1	2.	C	1	2.	D	1
3.	E	2	3.	B	2	3.	B	1	3.	B	1	3.	A	2	3.	A	1
4.	E	3	4.	A	2	4.	D	1	4.	C	1	4.	C	1	4.	E	1
5.	B	3	5.	E	2	5.	E	3	5.	B	1	5.	D	2	5.	D	3
6.	A	3	6.	A	3	6.	A	2	6.	A	2	6.	B	2	6.	C	3
7.	A	3	7.	B	3	7.	B	2	7.	E	2	7.	C	3	7.	B	3
8.	E	5	8.	A	3	8.	C	3	8.	C	2	8.	A	3	8.	C	3
9.	D	5	9.	E	4	9.	E	5	9.	A	1	9.	A	3	9.	E	5
10.	C	1	10.	B	5	10.	E	3	10.	D	3	10.	D	4	10.	C	5
11.	E	3	11.	C	1	11.	A	3	11.	D	3	11.	B	4			
12.	D	2	12.	A	1	12.	B	5	12.	E	3	12.	B	3			
13.	E	4	13.	E	2	13.	A	5	13.	A	3	13.	D	4			
14.	E	3	14.	C	2				14.	A	3	14.	C	4	_____		
15.	E	4	15.	E	2				15.	D	3	15.	A	5	no. correct		
16.	C	3	16.	A	3				16.	B	3						
17.	E	3	17.	E	4	_____		no. correct	17.	C	3						
18.	B	3	18.	C	3				18.	E	3				_____		no. incorrect
19.	A	4	19.	C	4				19.	E	4	_____		no. correct			
20.	C	1	20.	C	4				20.	A	3						
21.	B	4	21.	D	4	_____		no. incorrect	21.	C	4						
22.	C	3	22.	C	4				22.	A	4	_____		no. incorrect			
23.	B	3	23.	E	5				23.	E	4						
24.	C	3	24.	D	3				24.	D	5						
25.	D	3	25.	B	4				25.	E	5						
26.	B	3	26.	D	2												
27.	A	3	27.	A	3												
28.	B	5	28.	B	3												
29.	A	4	29.	C	3				_____		no. correct						
30.	C	3	30.	E	3												
			31.	C	2												
			32.	A	3												
_____			33.	A	3				_____		no. incorrect						
no. correct			34.	D	5												
			35.	D	4												

no. incorrect			_____														
			no. correct														

			no. incorrect														

Section 3

Student-Produced Response Questions

COR. ANS.	DIFF. LEV.
16. 100	1
17. 3	2
18. 20 or 50	2
19. 410	3
20. 144	3
21. 180	3
22. 60	4
23. 20	4
24. 6/5 or 1.2	4
25. 33	5

no. correct
(16-25)

NOTE: Difficulty levels are estimates of question difficulty for a reference group of college-bound seniors. Difficulty levels range from 1 (easiest) to 5 (hardest).

The Scoring Process

Machine-scoring is done in three steps:

- **Scanning.** Your answer sheet is “read” by a scanning machine and the oval you filled in for each question is recorded on a computer tape.
- **Scoring.** The computer compares the oval filled in for each question with the correct response. Each correct answer receives one point; omitted questions do not count toward your score. For each wrong answer to the multiple-choice questions, a fraction of a point is subtracted to correct for random guessing. For questions with five answer choices, one-fourth of a point is subtracted for each wrong response; for questions with four answer choices, one-third of a point is subtracted for each wrong response. The SAT I verbal test has 78 questions with five answer choices each. If, for example, a student has 44 right, 32 wrong, and 2 omitted, the resulting raw score is determined as follows:

$$44 \text{ right} - \frac{32 \text{ wrong}}{4} = 44 - 8 = 36 \text{ raw score points}$$

Obtaining raw scores frequently involves the rounding of fractional numbers to the nearest whole number. For example, a raw score of 36.25 is rounded to 36, the nearest whole number. A raw score of 36.50 is rounded upward to 37.

- **Converting to reported scaled score.** Raw test scores are then placed on the College Board scale of 200 to 800 through a process that adjusts scores to account for minor differences in difficulty among different editions of the test. This process, known as equating, is performed so that a student’s reported score is not affected by the edition of the test taken or by the abilities of the group with whom the student takes the test. As a result of placing SAT I scores on the College Board scale, scores earned by students at different times can be compared. For example, an SAT I verbal score of 400 on a test taken at one administration indicates the same level of developed verbal ability as a 400 score obtained on a different edition of the test taken at another time.

How to Score the Test

SAT I Verbal Sections 1, 4, and 7

Step A: Count the number of correct answers for *Section 1* and record the number in the space provided on the worksheet on the next page. Then do the same for the incorrect answers. (Do not count omitted answers.) To determine subtotal A, use the formula:

$$\text{number correct} - \frac{\text{number incorrect}}{4} = \text{subtotal A}$$

Step B: Count the number of correct answers and the number of incorrect answers for *Section 4* and record the numbers in the spaces provided on the worksheet. To determine subtotal B, use the formula:

$$\text{number correct} - \frac{\text{number incorrect}}{4} = \text{subtotal B}$$

Step C: Count the number of correct answers and the number of incorrect answers for *Section 7* and record the numbers in the spaces provided on the worksheet. To determine subtotal C, use the formula:

$$\text{number correct} - \frac{\text{number incorrect}}{4} = \text{subtotal C}$$

Step D: To obtain D, add subtotal A, subtotal B, and subtotal C, keeping any decimals. Enter the resulting figure on the worksheet.

Step E: To obtain E, your raw verbal score, round D to the nearest whole number. (For example, any number from 44.50 to 45.49 rounds to 45.) Enter the resulting figure on the worksheet.

Step F: To find your SAT I verbal score, use the conversion table on page 40 to look up the total raw verbal score you obtained in step E. Enter this figure on the worksheet.

SAT I Mathematical Sections 2, 3, and 6

Step A: Count the number of correct answers and the number of incorrect answers for *Section 2* and record the numbers in the spaces provided on the worksheet. To determine subtotal A, use the formula:

$$\text{number correct} - \frac{\text{number incorrect}}{4} = \text{subtotal A}$$

Step B: Count the number of correct answers and the number of incorrect answers for the *four-choice quantitative comparison questions (questions 1 through 15) in Section 3* and record the numbers in the spaces provided on the worksheet. **Note:** Do not count any E responses to questions 1 through 15 as correct or incorrect. Because these four-choice questions have no E answer choices, E responses to these questions are treated as omits. To determine subtotal B, use the formula:

$$\text{number correct} - \frac{\text{number incorrect}}{3} = \text{subtotal B}$$

Step C: Count the number of correct answers for the student-produced response questions (*questions 16 through 25*) in *Section 3* and record the number in the space provided on the worksheet. This is subtotal C.

Step D: Count the number of correct answers and the number of incorrect answers for *Section 6* and record the numbers in the spaces provided on the worksheet. To determine subtotal D, use the formula:

$$\text{number correct} - \frac{\text{number incorrect}}{4} = \text{subtotal D}$$

Step E: To obtain E, add subtotal A, subtotal B, subtotal C, and subtotal D, keeping any decimals. Enter the resulting figure on the worksheet.

Step F: To obtain F, your raw mathematical score, round E to the nearest whole number. (For example, any number from 44.50 to 45.49 rounds to 45.) Enter the resulting figure on the worksheet.

Step G: To find your SAT I mathematical score, use the conversion table on page 40 to look up the total raw mathematical score you obtained in step F. Enter this figure on the worksheet.

SAT I Scoring Worksheet

SAT I Verbal Sections

A. Section 1:	$\frac{\text{no. correct}}{\text{no. correct}} - \left(\frac{\text{no. incorrect}}{\text{no. incorrect}} \div 4 \right) =$	$\frac{\text{subtotal A}}{\text{subtotal A}}$
B. Section 4:	$\frac{\text{no. correct}}{\text{no. correct}} - \left(\frac{\text{no. incorrect}}{\text{no. incorrect}} \div 4 \right) =$	$\frac{\text{subtotal B}}{\text{subtotal B}}$
C. Section 7:	$\frac{\text{no. correct}}{\text{no. correct}} - \left(\frac{\text{no. incorrect}}{\text{no. incorrect}} \div 4 \right) =$	$\frac{\text{subtotal C}}{\text{subtotal C}}$
D. Total unrounded raw score (Total A + B + C)		$\frac{\text{D}}{\text{D}}$
E. Total rounded raw score (Rounded to nearest whole number)		$\frac{\text{E}}{\text{E}}$
F. SAT I verbal reported scaled score (See the conversion table.)		<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div> <p style="text-align: center;">SAT I verbal score</p>

SAT I Mathematical Sections

A. Section 2:	$\frac{\text{no. correct}}{\text{no. correct}} - \left(\frac{\text{no. incorrect}}{\text{no. incorrect}} \div 4 \right) =$	$\frac{\text{subtotal A}}{\text{subtotal A}}$
B. Section 3: Questions 1-15 (quantitative comparison)	$\frac{\text{no. correct}}{\text{no. correct}} - \left(\frac{\text{no. incorrect}}{\text{no. incorrect}} \div 3 \right) =$	$\frac{\text{subtotal B}}{\text{subtotal B}}$
C. Section 3: Questions 16-25 (student-produced response)	$\frac{\text{no. correct}}{\text{no. correct}} =$	$\frac{\text{subtotal C}}{\text{subtotal C}}$
D. Section 6:	$\frac{\text{no. correct}}{\text{no. correct}} - \left(\frac{\text{no. incorrect}}{\text{no. incorrect}} \div 4 \right) =$	$\frac{\text{subtotal D}}{\text{subtotal D}}$
E. Total unrounded raw score (Total A + B + C + D)		$\frac{\text{E}}{\text{E}}$
F. Total rounded raw score (Rounded to nearest whole number)		$\frac{\text{F}}{\text{F}}$
G. SAT I mathematical reported scaled score (See the conversion table.)		<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div> <p style="text-align: center;">SAT I mathematical score</p>

SAT I Score Conversion Table Form Codes XD, XR

Raw Score	Verbal Scaled Score	Math Scaled Score	Raw Score	Verbal Scaled Score	Math Scaled Score
78	800		37	500	580
77	800		36	500	570
76	800		35	490	560
75	790		34	490	560
74	770		33	480	550
73	760		32	480	540
72	740		31	470	530
71	730		30	470	520
70	720		29	460	510
69	710		28	450	500
68	700		27	450	500
67	690		26	440	490
66	680		25	440	480
65	670		24	430	470
64	670		23	430	460
63	660		22	420	450
62	650		21	420	450
61	640		20	410	440
60	640	800	19	400	430
59	630	800	18	400	420
58	620	790	17	390	410
57	620	780	16	380	410
56	610	760	15	380	400
55	600	740	14	370	390
54	600	730	13	360	380
53	590	720	12	360	370
52	580	710	11	350	360
51	580	700	10	340	350
50	570	690	9	330	340
49	570	680	8	320	330
48	560	670	7	320	320
47	550	660	6	310	310
46	550	650	5	300	300
45	540	650	4	280	290
44	540	640	3	270	280
43	530	630	2	260	260
42	530	620	1	250	250
41	520	610	0	230	240
40	520	610	-1	210	220
39	510	600	-2	200	200
38	510	590	and below		

This table is for use only with the test in this booklet.