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The SAT I Math Prep: Easy/Medium MathBox contains pages of multiple choice, grid-in, and quantitative comparison questions covering the following four major topics and twenty-eight subtopics:

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Use these masters for quizzes, tests, in-class activities, or homework assignments. The questions were designed to help integrate the thinking process required on the SAT into your daily Pre-Algebra, Algebra, and Geometry curriculum. Use them to develop key skills and help students reach their potential for higher scores on standardized tests. Note that the Level A designation refers to Easy/Medium questions.

Pre-Algebra: Number Sense

Level A

1. $9 + 6 \div 3 =$

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

2. $100 \div 6 + 4 =$

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

3. $100 \div 5^2 + 6$

- (A) -2
 (B) 4
 (C) 10
 (D) 400
 (E) 406

4. $8 - 2 \div \frac{5}{2} =$

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

5. If a is positive and b is negative, all of the following must be negative except

- (A) $b - a$
 (B) ab
 (C) $a(-b)$
 (D) $(-a)(-b)$
 (E) $-a + b$

6. If a is positive and b is negative, all of the following must be positive except

- (A) $(-a)(b)$
 (B) $-b + a$
 (C) ab
 (D) $a - b$
 (E) $-a - b$

7. If $14 < y < 21$, $9 < x < 13$, and x and y are integers, what is the largest possible value of $\frac{y}{x}$?

- (A) 2
 (B) $\frac{9}{5}$
 (C) $\frac{5}{3}$
 (D) $\frac{3}{2}$
 (E) $\frac{6}{5}$

8. If x and y are positive integers, $2x + y \leq 30$, and $y > 4$, all of the following are possible values of $x - y$, except

- (A) -3
 (B) 0
 (C) 3
 (D) 6
 (E) 9

9. If x and y are positive integers, $3x + y \leq 30$, and $y > 3$, all of the following are possible values of $x + y$, except

- (A) 14
 (B) 18
 (C) 22
 (D) 26
 (E) 30

10. The number $(m + 9)$ is how much greater than $(m - 7)$?

- (A) 2
 (B) $m + 2$
 (C) $2m$
 (D) 16
 (E) $m + 16$

Pre-Algebra: Averages**Level A**

1. If the average (arithmetic mean) of 7 and p is 10, then $p =$

	7	7		
-	-	-	-	-
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

2. If the average (arithmetic mean) of -11 and t is 13, then $t =$

- (A) 11
(B) 13
(C) 15
(D) 26
(E) 37

3. Which of the following sets has the same number as its arithmetic mean and its median?

- I {8, 4, 2, 6, 5}
II {3, 5, 7, 4, 6}
III {1, 3, 9, 7, 5}

- (A) I only
(B) III only
(C) I and II only
(D) I and III only
(E) I, II and III

4. If each of the following numbers (20, 23, 35, 16) is decreased by x , the average (arithmetic mean) of the four numbers will be 22. What is the value of x ?

- (A) 1
(B) 1.5
(C) 2
(D) 2.5
(E) 3

5. If Arielle's grades in Biology were: 86, 71, 89, 73, 96, 79, and 80, what was Suzie's average for the term?

- (A) 84
(B) 83
(C) 82
(D) 81
(E) 80

6. Sally has the following test scores: 85, 100, 72, 87, 87, 69, and 95. What is the mean of her test scores?

- (A) 80
(B) 82
(C) 85
(D) 88
(E) 90

7. Mrs. Wang gives quizzes and tests each quarter. Drew received quiz grades of 90, 75, 80, and he received a 50 on the test. What will his quarter grade be if the tests are counted twice as much as the quizzes?

- (A) 82
(B) 77
(C) 74
(D) 69
(E) 61

8. Last week, Gabe spent 10 hours answering the phones and 25 hours filing documents. If he worked the same amount of time each day for five days, how many hours per day did he work?

- (A) 2
(B) 5
(C) 6
(D) 7
(E) 8

Algebra: Expressions**Level A****Directions for Quantitative 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**

29.

$m + 3n = 18$ and $p = 6$

$3m + 9n - 4p$

$m + 3n + 3p$

30.

$x > z > 0$

$(8x - 4z) - (5z + x)$

$9x - 9z$

31.

$x > 0$

$x(x - 2)$

0

32.

The product of k and 4 is $\frac{8}{3}$.

k

$\frac{2}{3}$

Column A**Column B**

33.

The quotient of 7 and m is 4.

m

$\frac{4}{7}$

34.

$h = -9$ and $n = 3$

$-h + 6n$

$6n + h$

35.

$d = 3$, $s = -5$

$3d + 5s$

$d^2 - s^2$

36.

$\frac{7}{g} = \frac{21}{4}$

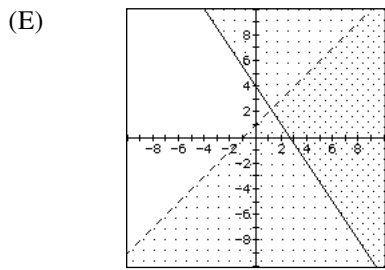
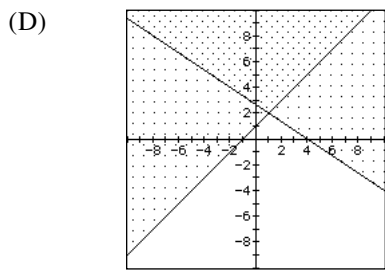
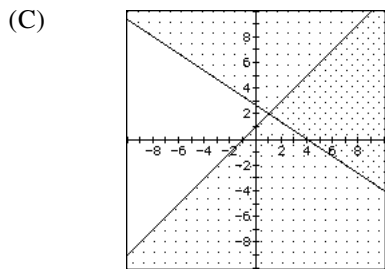
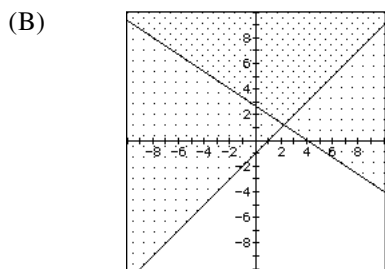
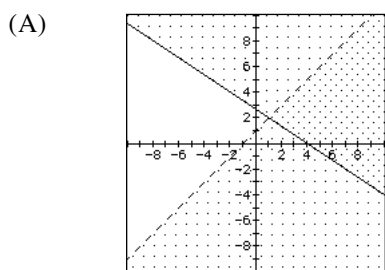
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$\frac{3}{4}$

Algebra: Inequalities

Level A

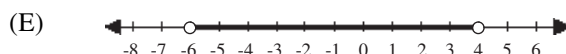
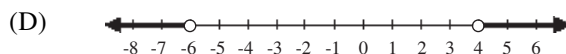
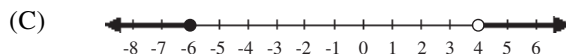
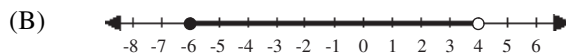
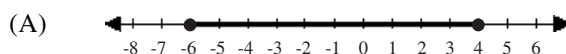
18. Graph the solution to $-2x - 3y \leq -8$ and $x < y + 1$.



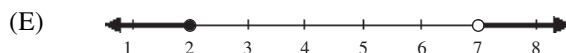
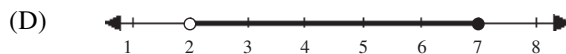
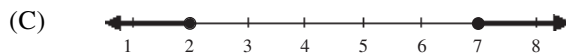
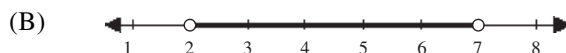
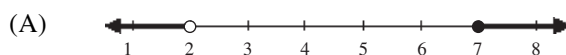
19. If $4x \leq \frac{2}{5}$, then x must be less than or equal to?

	7	7	
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

20. Which of the following graphs represents $-6 \leq x < 4$?



21. Which of the following graphs represents $2 < x \leq 7$?



Other: Newly Defined Symbols

Level A

Directions for Quantitative 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
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18.

$$g \diamond y = \frac{g^4}{y^3}$$

$4 \diamond 6$	$6 \diamond 8$
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19.

For all positive integers p and q ,
 let $p \text{ ⌘ } q = pq + (p - q)$.

$4 \text{ ⌘ } 6$	$6 \text{ ⌘ } 4$
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20.

For all positive integers p and q ,
 let $p \boxtimes q = pq - (p + q)$.

$4 \boxtimes 5$	$5 \boxtimes 4$
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21.

w° is defined for any positive integer w as the number obtained by writing the digits of w in increasing order.

For example, $32^\circ = 23$, $56^\circ = 56$, and $106^\circ = 16$

679°	7906°
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Column A	Column B
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22.

$$\triangle m = m^3 - m \quad \bigcirc m = m^2 + m$$

$\triangle -2 + \bigcirc 3$	$\triangle -3 + \bigcirc 2$
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23.

$w \blacklozenge s = w(w + s)$ for all integers w and s

$5 \blacklozenge (3 \blacklozenge 7)$	$(5 \blacklozenge 3) \blacklozenge 7$
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24.

$$\bigcirc x = \frac{-x + x}{2}$$

$\bigcirc -1$	$\bigcirc 1$
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25.

$r \text{ ⚡ } s$ is defined by the equation, $r \text{ ⚡ } s = 2s - r$

$2.5 \text{ ⚡ } 3.4$	4.3
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