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## ASSIGNMENT - 5

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### INEQUALITIES

NO. OF QUESTION - 10

1.  $3b - 4 \geq 8 - 9b$

For the inequality above, which of the following is NOT a solution?

- (A)  $-1$
- (B)  $1$
- (C)  $5$
- (D)  $11$

2. Which of the following inequalities is equivalent to  $5b > 20 + 10a$ ?

- (A)  $2a - b < -4$
- (B)  $b - 2a > 4$
- (C)  $2a - b > 4$
- (D)  $b - 2a > -4$

3. If  $5r + 7 \leq 2r - 5$ , what is the greatest possible value of  $2r + 3$ ?

- (A)  $-5$
- (B)  $-4$
- (C)  $7$
- (D)  $11$

4. When the stadium, which has seating capacity up to 70,000, opened to the public two hours before the game, there were 35,215 spectators at the stadium. Each minute after, the number of spectators increased by 230. If  $t$  represents the time, in minutes, after the stadium opened, which of the following inequalities represents the range of minutes when the stadium is at or above capacity?

- (A)  $70,000 - 230 \leq t$
- (B)  $70,000 \leq 230t$
- (C)  $70,000 - 230t \geq 35,215$
- (D)  $35,215 + 230t \geq 70,000$

5. 
$$y \leq -x + 5$$
$$y \geq 2x - 4$$

If a point with coordinates  $(p, q)$  is a solution to the given system of inequalities, what is the maximum possible value of  $p$ ?

- (A) 2
- (B) 3
- (C) 5
- (D) 6

6. Yamen predicts that the winning team of a tournament will score  $p$  points. To win a contest, his prediction must be within 3 points of the actual score. If the actual score is  $a$ , then which of the following inequalities represents the relationship between  $p$  and  $a$  required to win the contest?

- (A)  $|a - p| \leq 3$
- (B)  $|a - p| \geq 3$
- (C)  $|a + p| \leq 3$
- (D)  $|a + p| \geq 3$

7. 
$$y \geq -3x + 4$$
$$y \geq 2x - 6$$

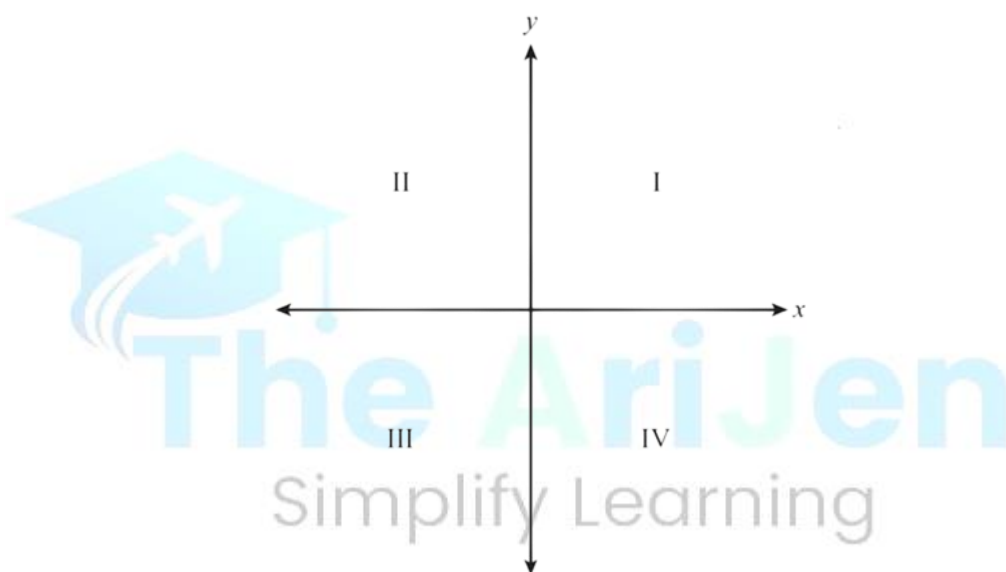
If a point with coordinates  $(p, q)$  is a solution to the given system of inequalities, what is the minimum possible value of  $q$ ?

- (A)  $-4$
- (B)  $-2$
- (C)  $0$
- (D)  $2$

8. Maria's cellular phone company charges \$30 per month plus \$3 for every gigabyte or portion thereof for data usage. If Maria does not want to spend more than \$50 this month, what is the maximum data, in gigabytes, she can use?

- (A)  $4\frac{1}{3}$   
(B) 6  
(C)  $6\frac{2}{3}$   
(D) 7

9.



If the system of inequalities  $y \leq -\frac{3}{2}x + 2$  and  $y < 3x - 1$  is graphed in the  $xy$ -plane above, which of the following quadrants contain possible solutions to the system?

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

10. Solve for  $x$  :  $-3x \geq 36$

- (A)  $x \leq -12$
- (B)  $x > 12$
- (C)  $x > -12$
- (D)  $x < -12$

