

## Solving Systems of Linear Equations Problems

1.  $2x - 4y = -8$   
 $4x - 2y = -16$

If  $(x, y)$  is a solution to the system of equations above, what is the value of  $x + y$ ? (No calculator)

- A) -2
- B) -4
- C) -8
- D) -16

2.  $3x - y = 2y + 2$   
 $x + 6y = 3$

Based on the system of equations above, what is the value of the product  $xy$ ? (No calculator)

- A)  $\frac{1}{21}$
- B)  $\frac{1}{7}$
- C)  $\frac{1}{3}$
- D) 16

3.  $5x + 2y = 6$   
 $4x - 2y = 12$

For the solution  $(x, y)$  to the system of equations above, what is the value of  $x - y$ ? (No calculator)

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

4.  $36x - 9y = 108$   
 $14x - 7y = 28$  For the system of equations above, what is the value of  $x + y$ ? (No calculator)

- A) 0
- B) 2
- C) 4
- D) 8

5.  $3y = \frac{4}{3} - \frac{x}{3}$   
 $5y = 4x$

In the  $xy$ -plane, the lines that correspond to the system of equations above intersect at the point

$(x, y)$ . What is the value of  $\frac{x}{y}$ ? (No calculator)

- A)  $\frac{20}{41}$
- B)  $\frac{16}{41}$
- C)  $\frac{20}{16}$
- D)  $\frac{16}{20}$

6.  $-x + y = -2.5$   
 $x + 3y = 10.5$

If  $(x, y)$  satisfies the system of equations above, what is the value of  $x$ ? (No calculator)

- A) -6.5
- B) -4.5
- C) 2
- D) 4.5

7.  $2x = 2y - 6$   
 $x + 4y = 12$

Which ordered pair  $(x, y)$  satisfies the system of equations shown above? (No calculator)

- A)  $(0, 3)$
- B)  $(6, -3)$
- C)  $(36, -6)$
- D)  $(-3, 3)$

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8.  $ax + by = 14$

$3x + 5y = 70$  The system of equations above contains constants  $a$  and  $b$ . What is the value of

$\frac{a}{b}$  if the system has infinitely many solutions?

(No calculator)

A)  $\frac{2}{5}$

B)  $\frac{3}{5}$

C) 1

D)  $\frac{5}{3}$

9.  $3x + 6y = 10$

$6x + cy = 12$

In the system of equations above,  $c$  is a constant.

For what value of  $c$  will there be no solution

$(x, y)$  to the system of equations? (No

calculator)

A) 3

B) 6

C) 9

D) 12

10.  $cx + 3y = 24$

$192x + 64y = 384$

In this system of equations above,  $c$ , is a constant. For what value of  $c$  will there be infinitely many solutions to the system of equations? (No calculator)

A) 3

B) 6

C) 9

D) 12