

## BLUE MATH LESSON 11A: ONE- AND TWO-VARIABLE EQUATIONS AND INEQUALITIES

## Race to the Finish

**Directions:** Answer each question below.

## HOMEWORK SET (NO CALCULATOR)

1. If  $\frac{2x}{9} + \frac{5y}{2} = 3$ , what is the value of  $8x + 90y$ ?

A) 12  
B) 54  
C) 108  
D) 216

$$\frac{7-(k+1)}{3} = \frac{2+k}{2}$$

4. In the equation above, what is the value of  $k$ ?

A) 0  
B)  $\frac{5}{6}$   
C)  $\frac{6}{5}$   
D)  $\frac{18}{5}$

2. If  $15x + 35y = -30$ , then  $9x + 21y =$

A) -50  
B) -42  
C) -30  
D) -18

$$2d = \frac{4}{3}(d + 1)$$

5. In the equation above, what is the value of  $d$ ?

A) -2  
B) 0.5  
C) 1  
D) 2

$$4x + \frac{y}{9} = 6$$

$$3x - y = -2$$

3. Based on the above system of equations, what is the value of the product  $xy$ ?

A)  $\frac{4}{3}$   
B) 6  
C) 8  
D) 24

$$5y + 4 = \frac{7}{3}$$

6. In the equation above, what is the value of  $y$ ?

A)  $-\frac{5}{3}$   
B)  $-\frac{1}{3}$   
C)  $\frac{1}{3}$   
D)  $\frac{5}{3}$

$$3x - 5y = 17$$

$$10y + 18 = 2x$$

7. Which of the following ordered pairs is a valid solution to the system of equations above?
- A) (4, -1)  
B) (4, 1)  
C) (-4, -1)  
D) (-4, 1)
8. If  $\frac{2}{x-3} + 2 = -3$ , what is  $10x$ ?
- A) 26  
B) 31  
C) 32  
D) 33
9. If  $\frac{6}{x-1} + 2 = -3$ , then  $x =$
- A)  $-\frac{11}{5}$   
B)  $-\frac{1}{5}$   
C)  $\frac{1}{5}$   
D)  $\frac{11}{5}$
10. If  $\frac{3}{2-x} \geq 3$ , which of the following is true?
- A)  $1 \leq x < 2$   
B)  $1 \leq x \leq 2$   
C)  $x \leq 1$  or  $x > 2$   
D)  $x < 1$  or  $x \geq 2$
11. If  $-\frac{6y}{x+2} = 3$ , then  $\frac{-x-2}{y} =$
- A) -2  
B)  $-\frac{1}{2}$   
C)  $\frac{1}{2}$   
D) 2
12. If  $\frac{3y}{z} = 12$ ,  $y \neq 0$ , and  $z \neq 0$ , what is  $\frac{z}{y} - 1$ ?
- A)  $-\frac{3}{4}$   
B)  $\frac{1}{4}$   
C) 3  
D) 5
13. If  $-\frac{2}{x} = \frac{1-y}{4}$  for all nonzero  $x$ , what is  $xy - x + 3$ ?
- A) -5  
B) 5  
C) 8  
D) 11
14. If  $6x + 18y = 9$ , what is  $3x + 9y$ ?
- A)  $\frac{9}{4}$   
B) 3  
C)  $\frac{9}{2}$   
D) 6

## Lesson 11A: One- and Two-Variable Equations and Inequalities

15. If  $\frac{(3x+2)y}{y-4} - 4 = 6x$ ,  $y \neq 4$ , and  $x \neq -\frac{2}{3}$ , what is  $\frac{y-4}{y}$ ?
- A)  $-\frac{1}{2}$   
B)  $\frac{1}{2}$   
C) 1  
D) 2
16. If  $(2x + 1)^2 = 25$ , then  $x$  could equal
- A) 4 or 6  
B) 2 or 3  
C) 4 or -6  
D) 2 or -3
17. If  $-3 < 4x - 5 < 11$ , and  $x$  is an integer, what is one possible value of  $3x$ ?
18. If  $16x - 20y = 8$ , what is  $\frac{x}{2} - \frac{5y}{8}$ ?
19. If  $\frac{1}{2x-1} = 6$ , what is  $6x$ ?
20. If  $2x - 17 = -y$ , what is  $6x + 3y$ ?