

"Grit is living life like it is a marathon, not a sprint."

**Shapes of Algebra CMP2 Practice Test (May 2015)**

**Multiple Choice:** Bubble the choice that best completes the statement or answers the question on the answer sheet.

- 1 What is the slope of the linear equation  
 $-12x + 3y = -15$ ?

A.  $-5$   
B.  $12$   
C.  $-15$   
D. none of these  
E.  $4$

- 2 What is the x-intercept of the linear equation  
 $-12x + 3y = -15$ ?

A. none of these  
B.  $(-4, 0)$   
C.  $\left(\frac{5}{4}, 0\right)$   
D.  $(-5, 0)$   
E.  $\left(\frac{4}{5}, 0\right)$

- 3 What is the y-intercept of the linear equation  
 $x - 15y = 20$ ?

A.  $(0, -15)$   
B.  $\left(0, \frac{4}{3}\right)$   
C.  $\left(0, -\frac{4}{3}\right)$   
D. none of these  
E.  $(0, 20)$

- 4 What is the slope of the linear equation  
 $x - 15y = 20$ ?

A.  $-\frac{1}{15}$   
B.  $-\frac{4}{3}$   
C. none of these  
D.  $\frac{4}{3}$   
E.  $\frac{1}{15}$

- 5 Which of the following equations is the equivalent standard form ( $Ax + By = C$ ) of  $-4y - 10 = \frac{2}{5}x$ ?

A.  $2x + 20y = 50$   
 B.  $-2x - 20y = 50$   
 C.  $-\frac{2}{5}x - 4y = -10$   
 D. none of these  
 E.  $\frac{2}{5}x + 4y = 10$

- 6 Rewrite the equation below in  $y = mx + b$  form.

$$4x - \frac{2}{3}y = 20$$

A.  $y = \frac{8}{3}x - 60$   
 B.  $y = -4x + 20 \div \frac{2}{3}$   
 C.  $y = 6x - 30$   
 D.  $y = -6x + 30$   
 E. none of these

- 7 Which of the following shows the best first step used by Tom Brady when solving the system below using the substitution method?

$$\begin{cases} 4x - 2y = 24 \\ y = x - 5 \end{cases}$$

A.  $-2y = 24 - 4x$   
 B.  $x - 5 = 4x - 2y$   
 C.  $4x - 2(x - 5) = 24$   
 D. none of these  
 E.  $x - 5 = 2x + 24$

- 8 Which is the best first step to used by Mr. Chute when solving the linear system given using the elimination/combination method?  $\begin{cases} 3x + 5y = 6 \\ -4x + 2y = 5 \end{cases}$  ?

A. add the first equation to the second  
 B. divide the second equation by 3  
 C. multiply the first equation by -4  
 D. multiply the 2nd equation by -2.5  
 E. none of these

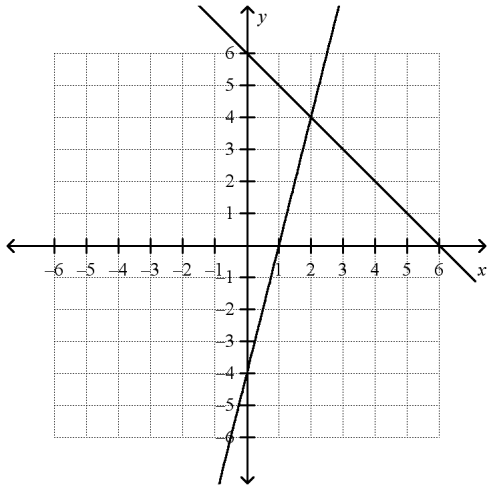
- 9 Which is the best first step to used by Louis when solving the linear system given using the substitution method?  $\begin{cases} 4x - 2y = 24 \\ y + 5 = x \end{cases}$  ?
- A. none of these
- B. multiply the first equation by 2
- C. divide the first equation by 2
- D. subtract 5 from the second equation
- E. multiply the second equation by -4
- 10 Solve the inequality created by Molly:  
 $2(-3x + 5) > -8$ .
- A.  $x < -3$
- B. none of these
- C.  $x > 3$
- D.  $x > -3$
- E.  $x < 3$
- 11 Solve the inequality created by Manny:  
 $5x + 7 \leq 3(x + 1)$
- A.  $x \geq 4$
- B.  $x \geq -2$
- C.  $x \leq 4$
- D. none of these
- E.  $x \leq -2$
- 12 If Owne wrote  $w = 3x + c$ , then what is the value of  $x$ ?
- A. none of these
- B.  $\frac{w-c}{3}$
- C.  $w - c$
- D.  $\frac{w+c}{3}$
- E. 3
- 13 Kevin said that if you triple his age, the result will be 1 less than his mother's age. Which of the equations shows the relationship between Kevin's age  $x$  and his mother's age  $y$ ?
- A.  $y - 3x = 1$
- B.  $3x - y = 1$
- C. none of these
- D.  $3x - 1 = y$
- E.  $3x = 1 - y$
- 14 Keenan wondered which point is *not* on the graph of  $-5y + 2x = 13$ ?
- A. none of these
- B.  $(4, -1)$
- C.  $(0, 3.2)$
- D.  $(9, 1)$
- E.  $(6.5, 0)$

- 15 Which of the following graphs drawn by Sarah shows

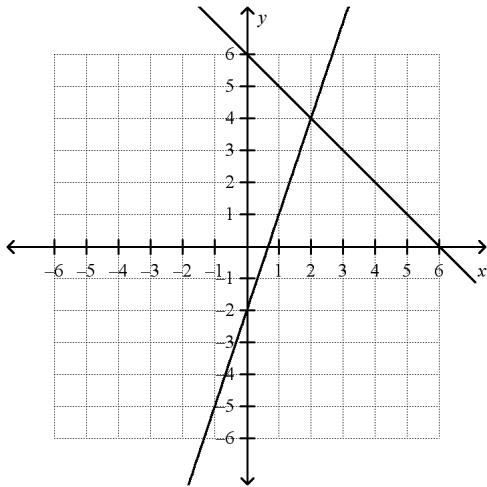
the linear system 
$$\begin{cases} 3x + 2y = 14 \\ y - x = 2 \end{cases} ?$$

A. none of these

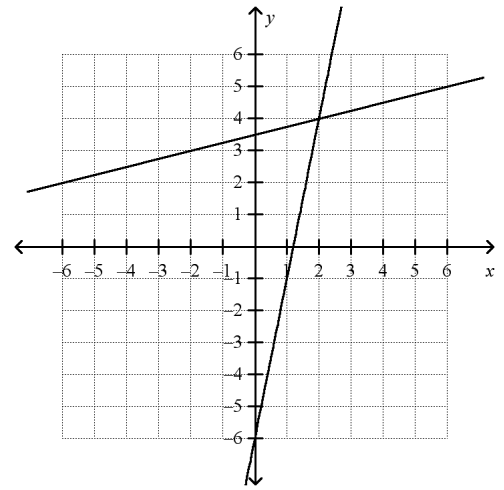
B.



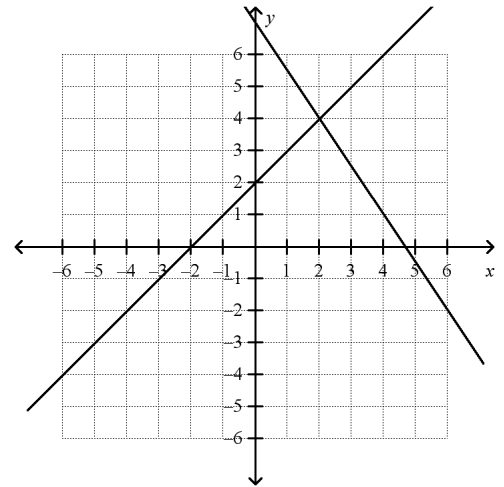
C.



D.



E.



- 16 Izzy wants to fence off part of her yard for a garden. She has 150 feet of fencing. She wants a rectangular garden with a length of 1.5 times its width. Which system represents these conditions?

A. none of these

B. 
$$\begin{cases} w = 1.5l \\ w + l = 150 \end{cases}$$

C. 
$$\begin{cases} 3w = 2l \\ 2(w + l) = 150 \end{cases}$$

D. 
$$\begin{cases} 2w = 3l \\ w + l = 75 \end{cases}$$

E. 
$$\begin{cases} 1.5w = l \\ w + l = 150 \end{cases}$$

- 17 Solve the linear system created by Manny:

$$\begin{cases} 3x + 5y = 6 \\ -4x + 2y = 5 \end{cases}$$

A.  $(7, -3)$

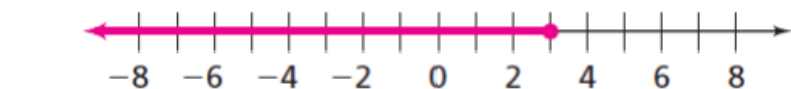
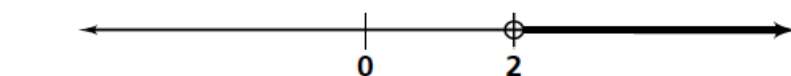
B.  $\left(-2, \frac{12}{5}\right)$

C. none of these

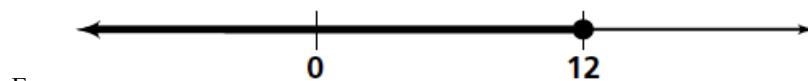
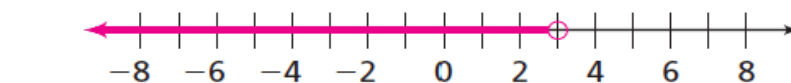
D.  $\left(-\frac{1}{2}, \frac{3}{2}\right)$

E.  $(-6, -9.5)$

- 18 Jennifer wanted to know which of the graphs below shows all the solutions for  $-3x - 4 \leq -13$ ?



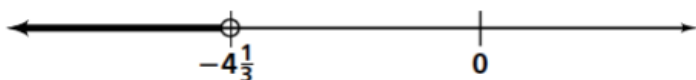
C. none of these



- 19 What is true about the following linear system found in Victoria's spiral notebook? 
$$\begin{cases} 2x + y = 3 \\ 4x + 2y = 8 \end{cases}$$

- A. none of these
- B. there is no solution
- C. there is exactly one solution
- D. there are many solutions
- E. there is not enough information to solve

- 20 Which of the following matches the given graph created by Colby?



- A.  $x < -4\frac{1}{3}$
- B.  $x \leq -4\frac{1}{3}$
- C. none of these
- D.  $x \geq -4\frac{1}{3}$
- E.  $x > -4\frac{1}{3}$

**Shapes of Algebra CMP2 Practice Test (May 2015)**  
**Answer Section**

**MULTIPLE CHOICE**

- 1 E
- 2 C
- 3 C
- 4 E
- 5 B
- 6 C
- 7 C
- 8 D
- 9 D
- 10 E
- 11 E
- 12 B
- 13 A
- 14 C
- 15 E
- 16 C
- 17 D
- 18 C
- 19 B
- 20 A