

20. Solve the system of linear equations.

$$\begin{aligned} 3x - 4y &= 4 \\ 3x - 4y &= -8 \end{aligned}$$

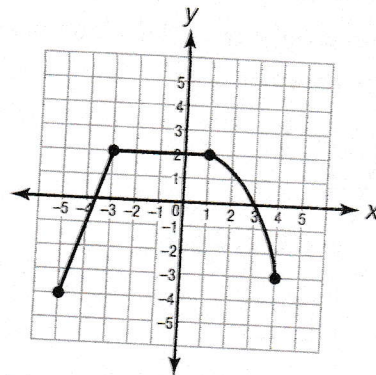
- A.  $(0, -1)$   
 B.  $(4, -1)$   
 C. no solution  
 D. infinitely many solutions
21. Which best describes the solution for this equation?

$$-2(x + 3) = -2x - 6$$

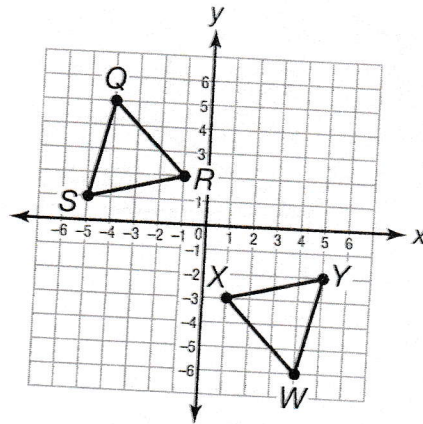
- A.  $x = -6$   
 B.  $x = 6$   
 C. no solution  
 D. infinitely many solutions
22. The population of New York is approximately  $2 \times 10^7$ . The population of New Jersey is approximately  $9 \times 10^6$ . Which statement accurately compares the populations of New York and New Jersey?

- A. The population of New Jersey is about 45 times greater than the population of New York.  
 B. The population of New York is about 45 times greater than the population of New Jersey.  
 C. The population of New Jersey is more than 2 times greater than the population of New York.  
 D. The population of New York is more than 2 times greater than the population of New Jersey.

23. Which statement is true of the interval from  $x = 1$  to  $x = 4$ ?



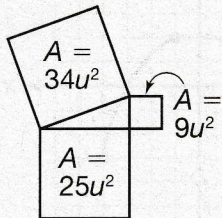
- A. That piece of the graph is nonlinear.  
 B. That piece of the graph is linear.  
 C. That piece of the graph is increasing.  
 D. That piece of the graph is constant.
24. Which sequence could be used to show that  $\triangle QRS$  is congruent to  $\triangle WXY$ ?



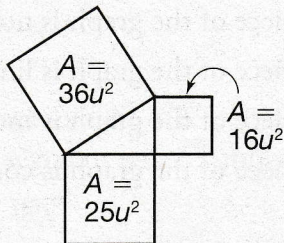
- A.  $90^\circ$  clockwise rotation of  $\triangle QRS$  around the origin followed by a translation of 1 unit down  
 B.  $180^\circ$  rotation of  $\triangle QRS$  around the origin followed by a translation of 1 unit down  
 C.  $180^\circ$  rotation of  $\triangle QRS$  around the origin followed by a translation of 1 unit to the left  
 D. No sequence of transformations could be used because  $\triangle QRS$  and  $\triangle WXY$  are not congruent.

25. Elizabeth needs to identify a right triangle. When joined at the vertices, which set of squares below could be used to form a right triangle? Note: drawings are not to scale.

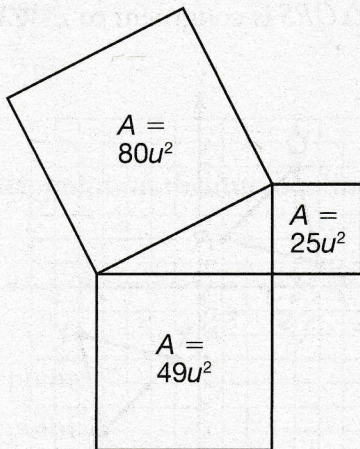
A.



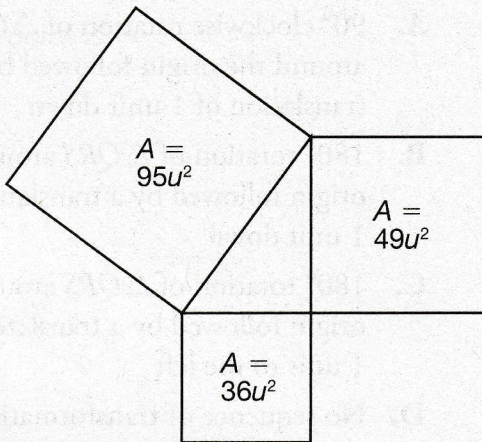
B.



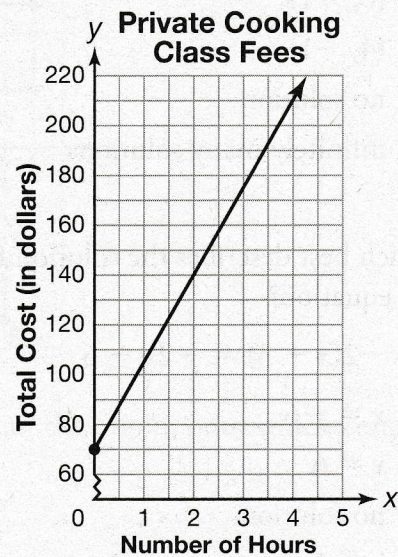
C.



D.



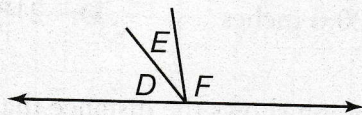
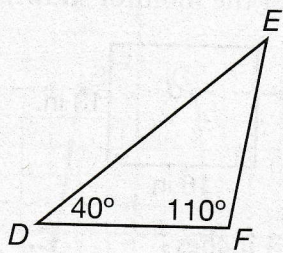
26. A chef teaches private cooking classes. She charges a set fee for each class plus an additional rate for each hour she teaches, as shown by the graph below.



Which statement is true about this graph?

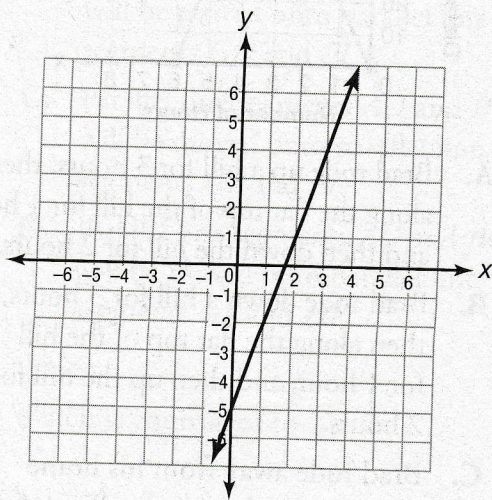
- A. The  $y$ -intercept shows that the set fee is \$0.
- B. The  $y$ -intercept shows that the set fee is \$70.
- C. The slope shows that the hourly rate is \$70 per hour.
- D. The slope shows that the hourly rate is \$210 per hour.

27. Elena took the angles of  $\triangle DEF$  and rearranged them to show that, together, they can form a straight line. Which is true of the measures of these angles?



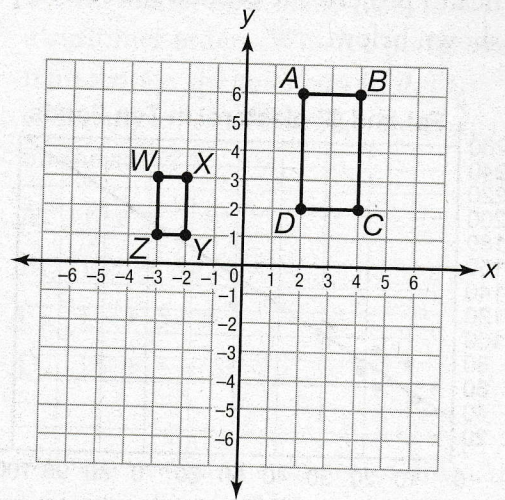
- A. Angle  $E$  must measure  $40^\circ$ .
- B. Angle  $E$  must measure  $110^\circ$ .
- C. The sum of the measures of angles  $D$ ,  $E$ , and  $F$  must measure  $90^\circ$ .
- D. The sum of the measures of angles  $D$ ,  $E$ , and  $F$  must measure  $180^\circ$ .

28. What is the equation of this line?



- A.  $y = 3x + 5$
- B.  $y = \frac{1}{3}x + 5$
- C.  $y = \frac{1}{3}x - 5$
- D.  $y = 3x - 5$

29. Which sequence could be used to show that rectangle  $ABCD$  is similar to rectangle  $WXYZ$ ?



- A. dilation of  $ABCD$  by a scale factor of  $\frac{1}{2}$  followed by a translation of 1 unit down
  - B. dilation of  $ABCD$  by a scale factor of  $\frac{1}{2}$  followed by a translation of 4 units to the left
  - C. dilation of  $ABCD$  by a scale factor of  $\frac{1}{4}$  followed by a translation of 1 unit down
  - D. dilation of  $ABCD$  by a scale factor of  $\frac{1}{4}$  followed by a translation of 4 units to the left
30. Solve the system of linear equations.

$$\begin{aligned} 2x + y &= 3 \\ 6x - 2y &= 14 \end{aligned}$$

- A.  $(1, -4)$
- B.  $(1, 1)$
- C.  $(2, -1)$
- D.  $(2, 1)$