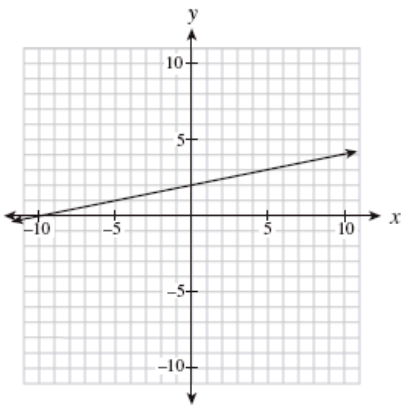
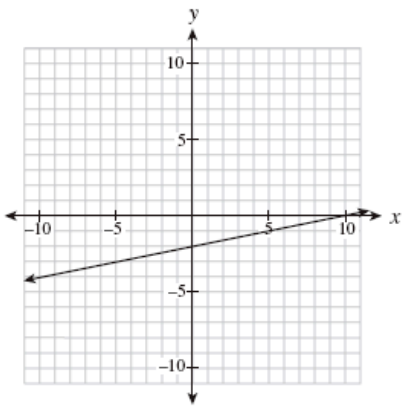
UNIT 6: Slope & Linear Relations Multiple Choice

1. Which graph represents the relation $x-5y+10=0$?

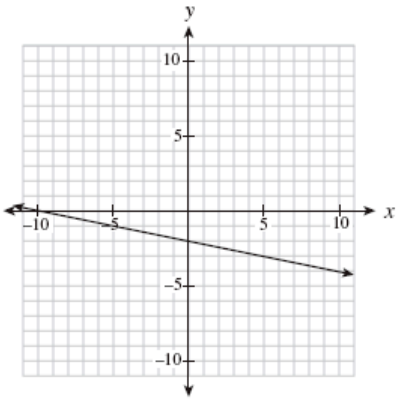
A.



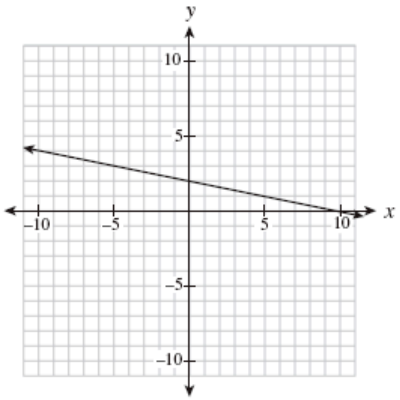
B.



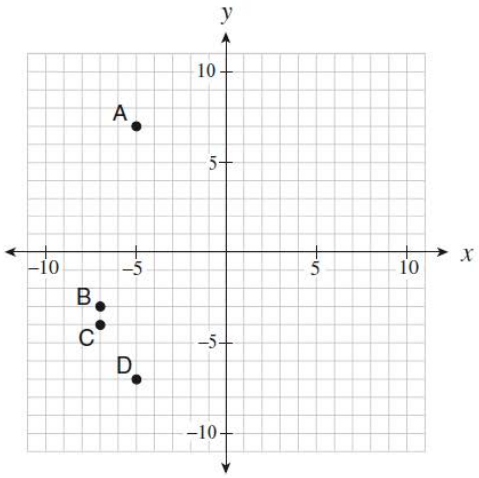
C.



D.



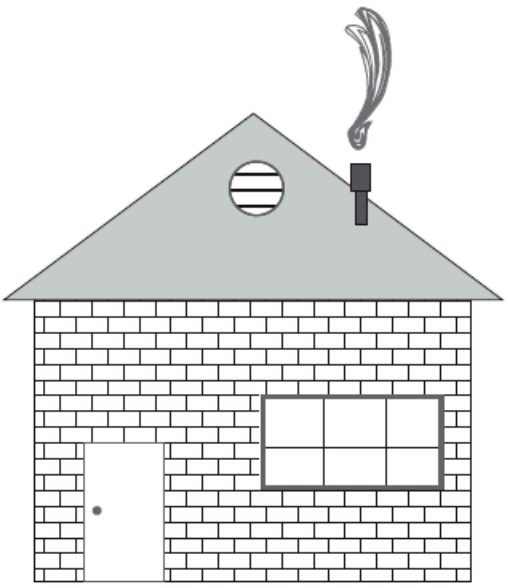
Use the following graph to answer question 2



2. The line $y-2=\frac{1}{2}(x-5)$ passes through which point on the graph?

A. A
B. B
C. C
D. D

3. Use a ruler to determine the slope of the roof shown below.



Note: This diagram is drawn to scale.

A. $\frac{3}{8}$

B. $\frac{3}{4}$

C. $\frac{4}{5}$

D. $\frac{4}{3}$

4. Calculate the slope between the points $(7, -3)$ and $(4, 3)$.

A. -2

B. $-\frac{1}{2}$

C. 2

D. 10

5. A line with an undefined slope passes through the points $(-2, 1)$ and (p, q). Which of the following points could be (p, q)?

A. $(1, 0)$

B. $(0, 1)$

C. $(0, -2)$

D. $(-2, 0)$

6. Determine the slope of the linear relation $3x+5y+15=0$.

A. $\frac{5}{3}$

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

C. $-\frac{3}{5}$

D. $-\frac{5}{3}$

7. Determine the slope-intercept equation of the line that is parallel to $y=\frac{2}{5}x-3$ and passes through the point $(0,\ 5)$.

A. $y=-\frac{5}{2}x-3$

B. $y=-\frac{5}{2}x+5$

C. $y=\frac{2}{5}x+3$

D. $y=\frac{2}{5}x+5$

8. Lines A and B are perpendicular and have the same x-intercept. The equation of line A is $x+2y-4=0$. Determine the y-intercept of line B.

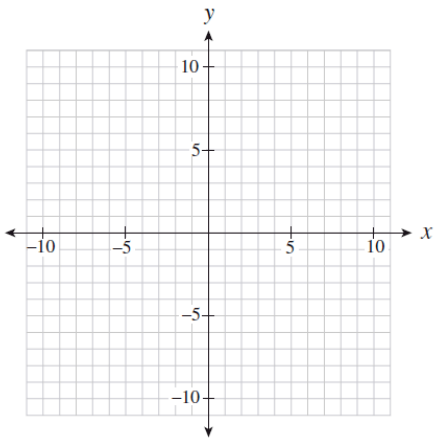
A. -8

B. -2

C. 4

D. 8

The grid below may be used for rough work to answer question 9



9. A line has a slope of $\frac{2}{3}$ and passes through the point $(6,\ 0)$. Which of the following points must also be on the line?

A. $(-3, -6)$
B. $(3,\ 8)$
C. $(4, -3)$
D. $(9,\ 3)$

10. Rewrite $y = \frac{x}{5} - 6$ in general form.

A. $\frac{x}{5} - y - 6 = 0$

B. $x + 5y - 6 = 0$

C. $x - 5y - 30 = 0$

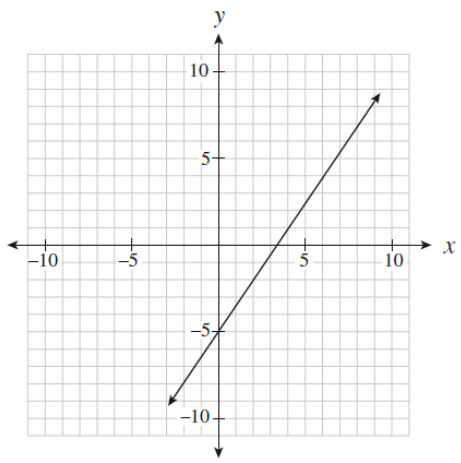
D. $5x - 5y - 30 = 0$

11. Given the equation $Ax + By + C = 0$, which of the following conditions must be true for the graph of the line to have a positive slope and a positive y-intercept?

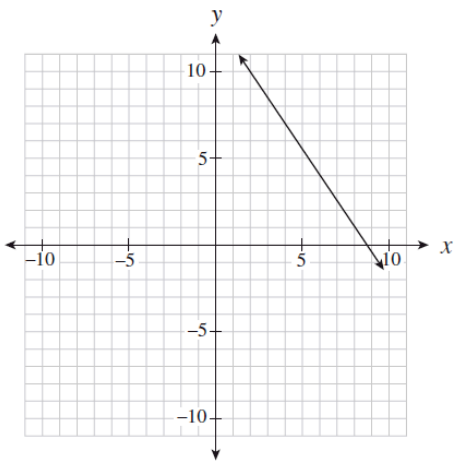
A. $A > 0,\ B > 0,\ C > 0$
B. $A > 0,\ B < 0,\ C > 0$
C. $A > 0,\ B > 0,\ C < 0$
D. $A > 0,\ B < 0,\ C < 0$

12. Which of the following graphs represents a line that passes through $(6,\ 4)$ and is perpendicular to $y = -\frac{2}{3}x$?

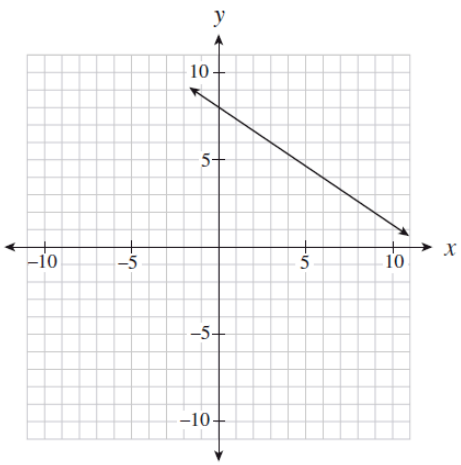
A.



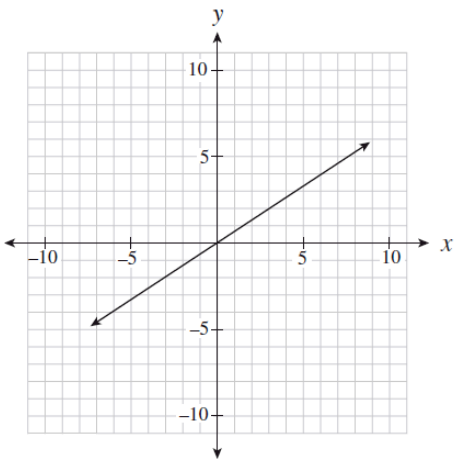
B.



C.



D.



13. Determine the slope-intercept form of the line that passes through the point $(-4,\ 3)$ and is parallel to the line segment that joins $\mathrm{A}(-1,\ -5)$ and $\mathrm{B}(-3,\ 1)$.

A. $y = -3x - 9$
B. $y = -3x + 5$
C. $y = -3x + 15$
D. $y = 3x + 15$

14. Which of the following statements are true for $2x + 3y = 6$?

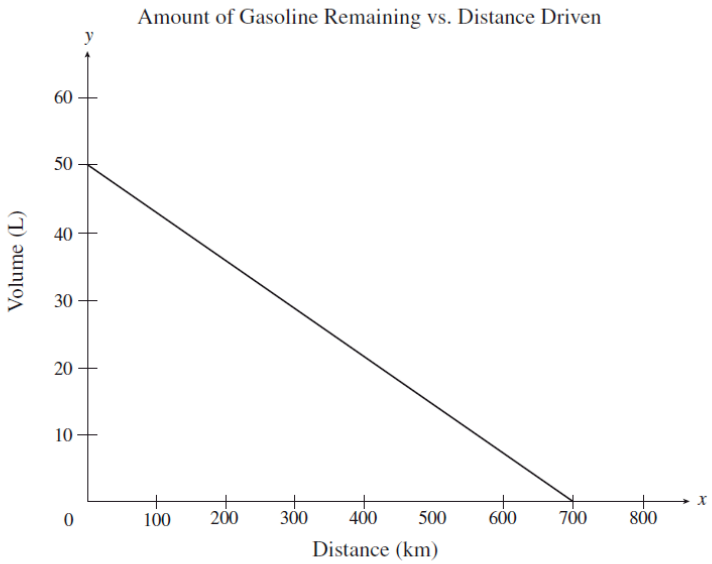
I.	The y-intercept is -2.
II.	The line is parallel to $y = 2x$.
III.	The slope-intercept form of the line is $y = \frac{2}{3}x + 2$.
IV.	The range is all real numbers.

A. IV only
B. I and II only
C. I and IV only
D. III and IV only

15. A hot-dog stand owner makes a profit of $100 when he sells 90 hot dogs a day. He has a loss of $30 when he sells 25 hot dogs a day. Which linear relation represents his profit?

A. $y = 0.5x + 55$
B. $y = 1.08x + 3.08$
C. $y = 1.11x$
D. $y = 2x - 80$

Use the following graph to answer question 16.



16. The graph above shows the relationship between the amount of gasoline remaining in a 50 L tank and the distance driven for a certain car.

What does the x-intercept represent in this situation?

A. fuel capacity of the gasoline tank
B. total distance travelled during a long trip
C. total distance driven until the car is out of gas
D. number of kilometres driven per litre of gasoline

(AB is parallel to CD)

17. The slope of AB is $-\frac{2}{3}$. The slope of CD is $\frac{w}{24}$. Given AB $\parallel$ CD, determine the value of w.
Answer as an integer.

18. Determine the equation of a line, in slope-intercept form, that passes through the points $(6, 1)$ and $(-10, 9)$.

A. $y=-\frac{1}{2}x+4$

B. $y=-\frac{1}{2}x-2$

C. $y=-2x+8$

D. $y=-2x+13$

19. Which of the following lines have a negative slope?

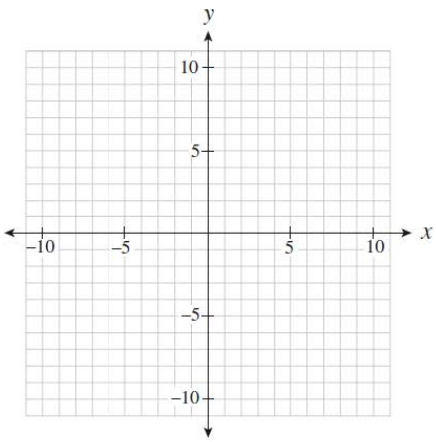
I.	$y+3=0$
II.	$2x+y=6$
III.	$(y+2)=-4(x-5)$

A. II only
B. III only
C. I and III only
D. II and III only

20. A waterslide descends 20 m over a horizontal distance of 50 m. What is the slope of the waterslide? Answer, with a positive value, to the nearest tenth.

21. In which quadrant do the graphs of $x = -7$ and $y = 2x + 1$ intersect?

A. Quadrant I
B. Quadrant II
C. Quadrant III
D. Quadrant IV

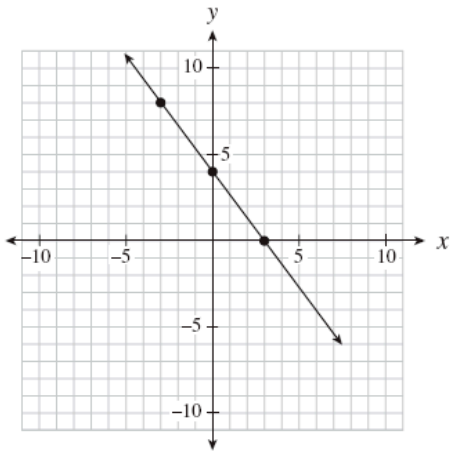


22. Which of the following coordinates are intercepts of the linear relation $2x - 3y + 30 = 0$?

I.	$(0, 10)$
II.	$\left(0, \frac{2}{3}\right)$
III.	$(-10, 0)$
IV.	$(-15, 0)$

A. I only
B. I and IV only
C. II and III only
D. II and IV only

Use the following graph to answer question 23



23. Which of the following equations describes the linear relation graphed above?

I.	$y = \frac{4}{3}x + 4$
II.	$y - 8 = -\frac{4}{3}(x + 3)$
III.	$4x + 3y - 12 = 0$

A. II only
B. I and II only
C. I and III only
D. II and III only

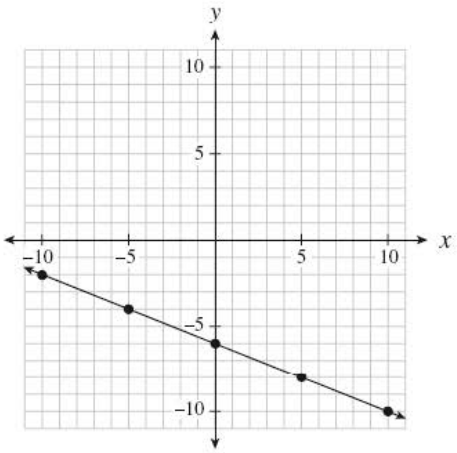
24. Kelly explained her method for graphing the linear relation $y = -\frac{2}{3}x + 7$ as follows:

Steps	
I.	Place a dot on the y-axis at positive 7.
II.	Move up two on the y-axis to positive 9.
III.	From the positive 9, move to the left three spots and place a dot there.
IV.	Draw a line through the two dots.

Where did Kelly make the first mistake in her explanation?

A. Step I
B. Step II
C. Step III
D. There is no mistake.

25. Which of the following relations could be produced by $y = \frac{2}{5}x - 6$?

I.	$2x - 5y - 30 = 0$
II.	$\{(15, 0), (10, -2), (-5, -8), (-10, -10)\}$
III.	

A. I only
B. II only
C. I and II only
D. I, II and III