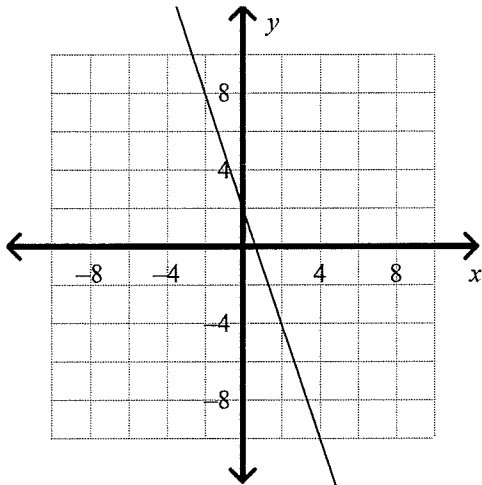


2016 Algebra 2A Midterm Review**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

What is an equation of the line in slope intercept form?



_____ 1.

a. $y = -3x + 2$

b. $y = -2x - 3$

c. $y = -3x - 2$

d. $y = 2x - 3$

Write an equation of the line, in point-slope form, that passes through the two given points.

_____ 2. points: $(-4, 12)$, $(8, -12)$

a. $y - 12 = -\frac{1}{2}(x + 4)$

b. $y - 4 = -2(x - 12)$

c. $y - 12 = -2(x + 4)$

d. $y - 4 = -\frac{1}{2}(x + 12)$

What is an equation of the line, in point-slope form, that passes through the given point and has the given slope?

_____ 3. point: $(6, -8)$; slope: 6

a. $y - 8 = 6(x - 6)$

b. $y - 8 = 6(x + 6)$

c. $y + 8 = 6(x - 6)$

d. $y + 8 = 6(x + 6)$

What is the equation of the given line in standard form? Use integer coefficients.

_____ 4. $y = \frac{5}{3}x - 10$

a. $5x + 3y = -30$

c. $-5x - 3y = -30$

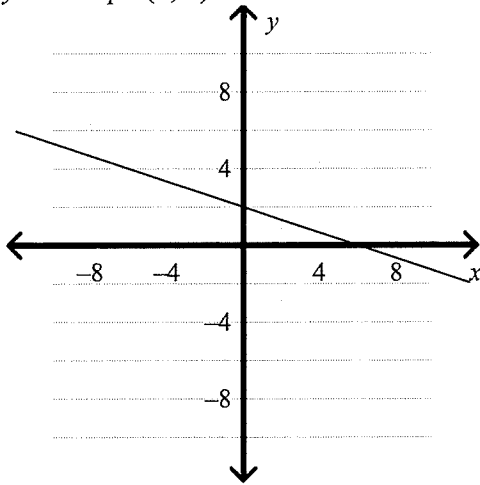
b. $-5x + 3y = -10$

d. $-5x + 3y = -30$

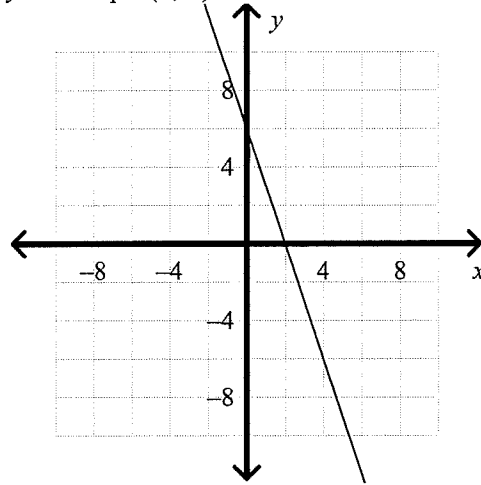
What are the intercepts of the equation? Graph the equation.

_____ 5. $6x + 2y = 12$

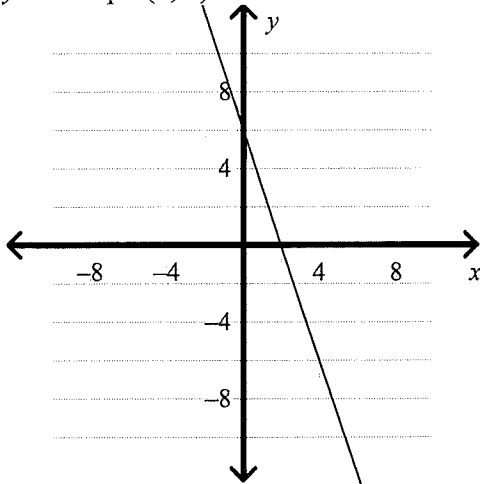
a. x-intercept: (2, 0)
y-intercept: (0, 6)



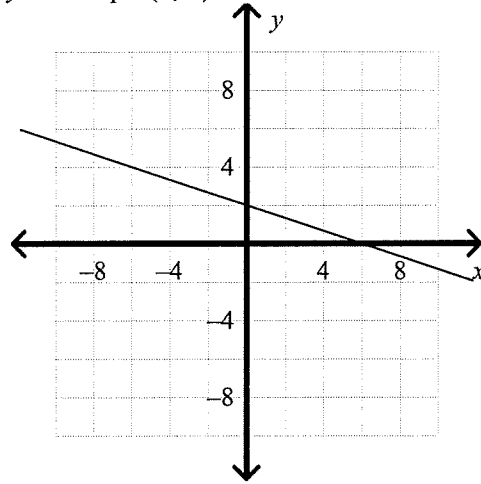
c. x-intercept: (6, 0)
y-intercept: (0, 2)



b. x-intercept: (2, 0)
y-intercept: (0, 6)

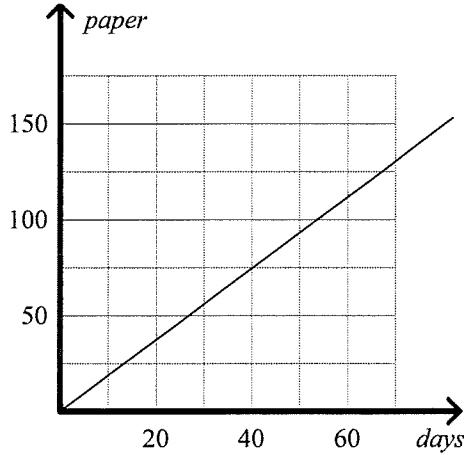


d. x-intercept: (6, 0)
y-intercept: (0, 2)

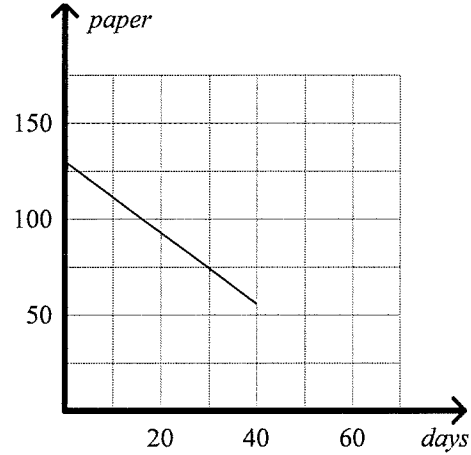


6. The office manager of a small office ordered 130 packs of printer paper. Based on average daily use, she knows that the paper will last about 70 days. What graph represents this situation? How many packs of printer paper should the manager expect to have after 10 days?

a.

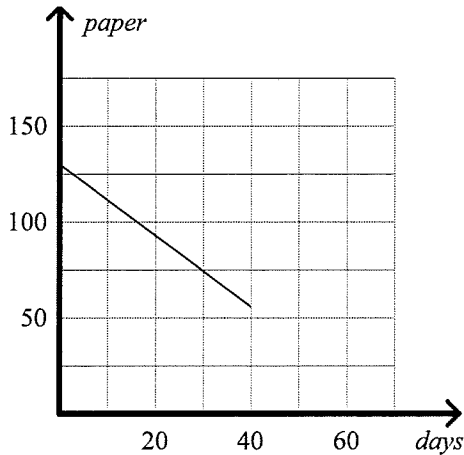


c.



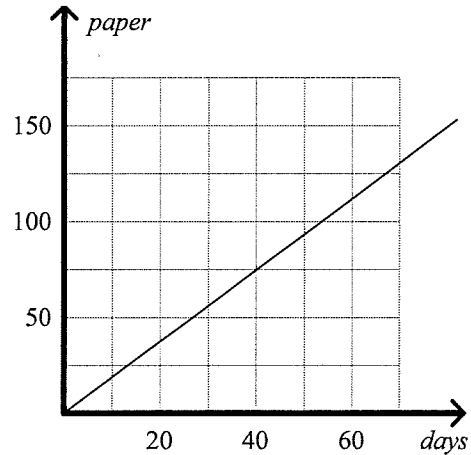
111.4 packs

b.



111.4 packs

d.



18.6 packs

18.6 packs

What is the equation of the line in slope-intercept form?

7. the line parallel to $y = 2x - 3$ through $(-4, 1)$

a. $y = 2x + 9$

c. $y = -\frac{1}{2}x + 9$

b. $y = 2x + 7$

d. $y = -2x + 9$

Name: _____

ID: A

_____ 8. the line perpendicular to $y = \frac{5}{6}x - 3$ through $(-1, 3)$

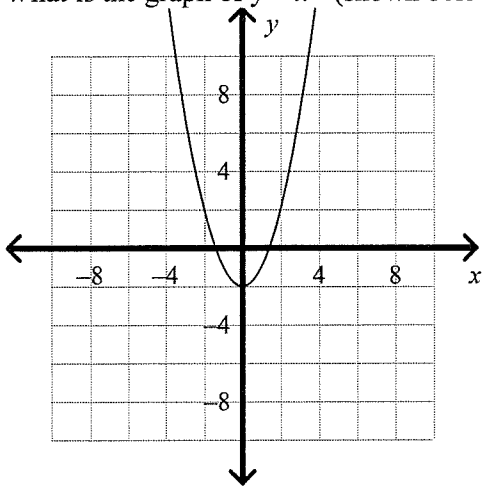
a. $y = \frac{6}{5}x + 1.8$

c. $y = \frac{5}{6}x + 1.8$

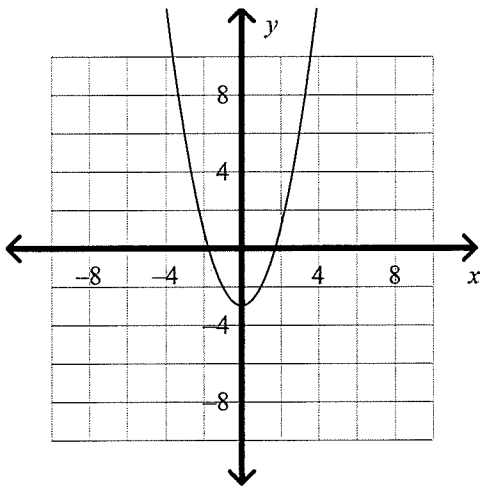
b. $y = -\frac{5}{6}x + 1.8$

d. $y = -\frac{6}{5}x + 1.8$

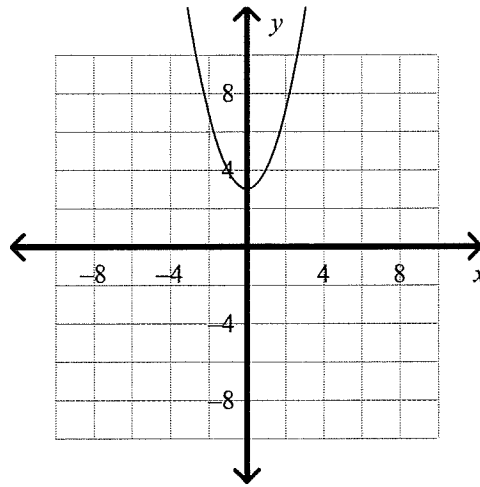
9. What is the graph of $y = x^2$ (shown below) translated up 3 units?



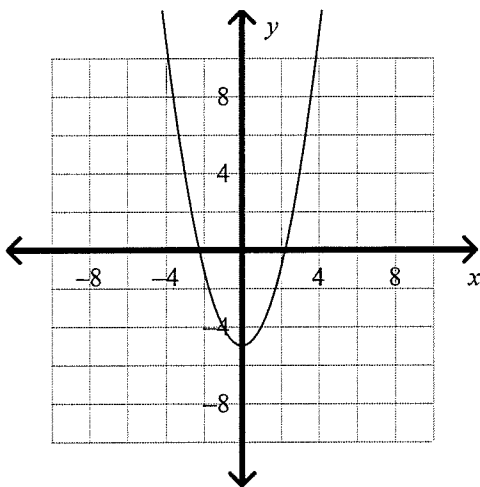
a.



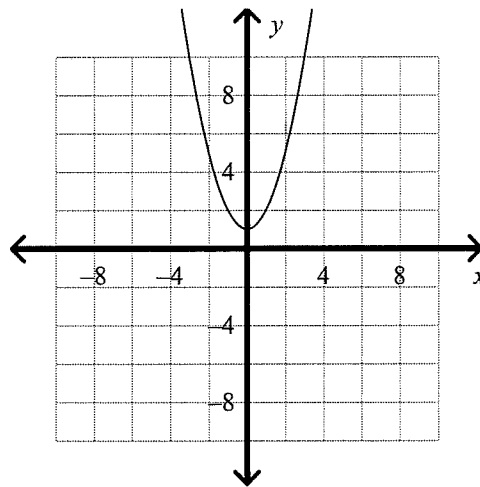
c.



b.



d.



Short Answer

- Let $f(x) = 5x + 7$ and $g(x) = -2x + 3$. Find $f(x) + g(x)$.
- Let $f(x) = 5x + 2$ and $g(x) = 7x - 6$. Find $f(x) - g(x)$.
- Let $f(x) = 6x + 5$ and $g(x) = 3x + 4$. Find $f \cdot g$.
- Let $f(x) = 3x - 6$ and $g(x) = x - 2$. Find $\frac{f}{g}$ and its domain.
- Let $f(x) = 4x - 7$ and $g(x) = -3x - 5$. Find $(f \circ g)(-4)$.
- Graph the relation and its inverse. Use open circles to graph the points of the inverse.

x	-10	-7	-5	8
y	2	10	-10	-4

What is the inverse of the given relation?

- $y = 3x + 12$
- Graph $y = -4x^2 + 2$ and its inverse.
- For the function $f(x) = (4 - 2x)^2$, find f^{-1} . Determine whether f^{-1} is a function.
- For the function $f(x) = \sqrt{x - 2}$, find f^{-1} . What is the range of f^{-1} ?
- For the function $f(x) = x - 2$, find $(f \circ f^{-1})(-2)$.

Let $g(x)$ be the reflection of $f(x)$ in the x -axis. What is the function rule for $g(x)$?

- Let $g(x)$ be the reflection of $f(x) = x^2 + 4$ in the y -axis. What is a function rule for $g(x)$?

The function $f(x)$ is represented by the given table. What are the corresponding values of the given $g(x)$?

- Write an equation for the following transformation of $y = x$:
a vertical compression by a factor of $\frac{1}{2}$

Find the function rule for $g(x)$.

14. The function $f(x) = x^2$. The graph of $g(x)$ is $f(x)$ translated to the left 9 units and down 2 units. What is the function rule for $g(x)$?

What transformations change the graph of $f(x)$ to the graph of $g(x)$?

15. $f(x) = x^2$; $g(x) = (x - 2)^2 + 8$

What is the graph of the absolute value equation?

16. $y = |x + 3| - 4$

What is the graph of the absolute value function?

17. $y = -\frac{1}{5}|x|$

Use matrices A , B , and C . Find the sum or difference if you can.

$$A = \begin{bmatrix} -5 & 4 \\ -8 & 2 \end{bmatrix} \quad B = \begin{bmatrix} -2 & 7 & -3 \\ 1 & -6 & 0 \end{bmatrix} \quad C = \begin{bmatrix} 5 & 3 & -1 \\ -3 & 0 & 6 \end{bmatrix}$$

18. $C + A$

19. $\begin{bmatrix} -3 & -1 & 7 \\ 0 & 8 & 2 \end{bmatrix} + \begin{bmatrix} -2 & 0 & 1 \\ -1 & 5 & -1 \end{bmatrix}$

Find the values of the variables.

20. $\begin{bmatrix} 5 - t & 0 \\ 8 & 1 \end{bmatrix} = \begin{bmatrix} -5 & 0 \\ 8 & -y + 2 \end{bmatrix}$

21. Find $4A - 2B$.

$$A = \begin{bmatrix} 3 & 6 \\ -2 & -8 \\ 9 & 1 \end{bmatrix} \quad B = \begin{bmatrix} 8 & 4 \\ 1 & -7 \\ 9 & -9 \end{bmatrix}$$

Solve the matrix equation.

$$22. -2X - 2 \begin{bmatrix} 2 & -8 \\ -4 & 2 \end{bmatrix} = \begin{bmatrix} 4 & -6 \\ 2 & -8 \end{bmatrix}$$

$$23. \begin{bmatrix} 4 & -7 \\ 1 & -8 \end{bmatrix} - X = \begin{bmatrix} 0 & 4 \\ 7 & 5 \end{bmatrix}$$

$$24. X + 2 \begin{bmatrix} 2 & -8 \\ -4 & 2 \end{bmatrix} = \begin{bmatrix} 4 & -6 \\ 2 & -8 \end{bmatrix}$$

Find the product.

$$25. \begin{bmatrix} 0 & 2 \\ -6 & 9 \end{bmatrix} \begin{bmatrix} -7 & 7 \\ 0 & 9 \end{bmatrix}$$

Determine whether the product is defined or undefined. If defined, give the dimensions of the product matrix.

$$26. \begin{bmatrix} 1 & 1 & -4 \\ 5 & 6 & 0 \end{bmatrix} \begin{bmatrix} 9 \\ 1 \\ -7 \end{bmatrix}$$

Evaluate the determinant of the matrix.

$$27. \begin{bmatrix} -11 & 7 \\ 5 & -4 \end{bmatrix}$$

$$28. \begin{bmatrix} 1 & -5 & 2 \\ -3 & -5 & -2 \\ -1 & -2 & -3 \end{bmatrix}$$

Does the given matrix, A , have an inverse? If it does, what is A^{-1} ?

29. $A = \begin{bmatrix} 5 & -3 \\ 2 & -1 \end{bmatrix}$

30.

Write the system $\begin{cases} 9y + z = -1 \\ 2x - 5y = -6 \\ 4x - 2z = 5 \end{cases}$ as a matrix equation.

What is the solution of the system? Solve using matrices.

31. $\begin{cases} 3x + 2y = 5 \\ 2x + y = 2 \end{cases}$