FRANKLIN LEARNING CENTER

616 N 15th St
Philadelphia, PA 19130

SUMMER WORK PACKAGE

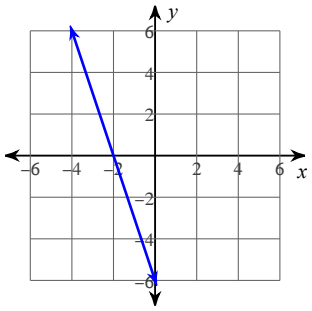
Multiple-choice questions designed for Algebra 1 graduates.

Name_____

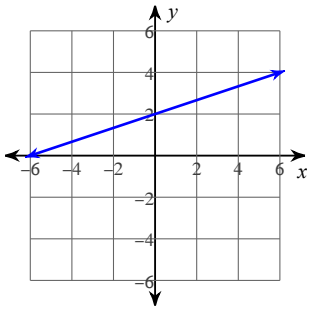
Sketch the graph of the line.

1) $x - 6 - 3y = 0$

A)



B)



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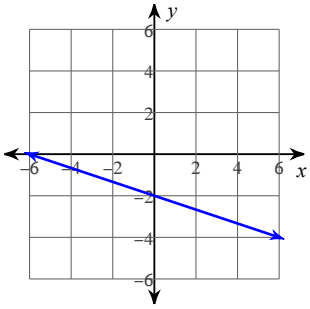

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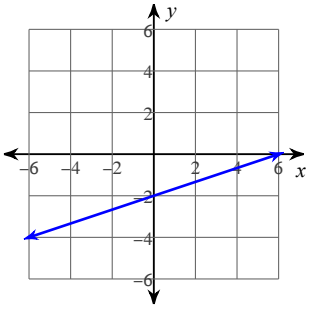


Write the slope-intercept form of the equation of the line through the given point with the given slope.

2) through: $(-1, 2)$, slope $= -6$

A) $y = -3x - 4$ B) $y = 4x - 4$ C) $y = -6x - 4$ D) $y = 3x - 4$

Factor the common factor out of the expression.

3) $-32x^6 + 40x^5 + 72x^3 - 24x^2$

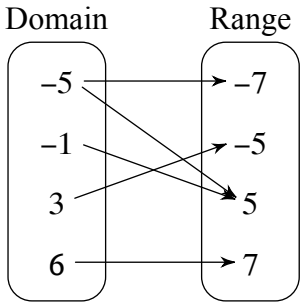
A) $32x^2(-4x^4 + x^2 + 9x - 3)$ B) $8x^2(-4x^4 + 5x^3 + 9x - 3)$

C) $8x^2(-4x^5 + 5x^3 + 9x - 3)$ D) $8x^2(-32x^5 + 40x^4 + 72x^2 - 24x)$

Each set of ordered pairs represents a relation. Represent the relation as a mapping diagram.

4) {(−5, −7), (−5, 5), (−1, 5), (2, −7), (6, 7)}

A)



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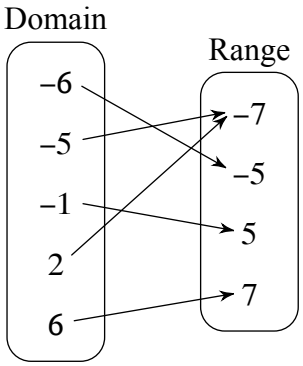

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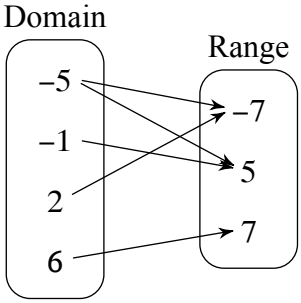
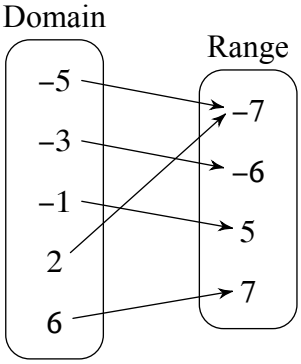


D)



Write the slope-intercept form of the equation of the line described.

5) through: $(3, -3)$, perpendicular to $y = \frac{1}{6}x + 1$

A) $y = 15x - 6$ B) $y = -3x + 15$ C) $y = 15x - 3$ D) $y = -6x + 15$

Write the slope-intercept form of the equation of the line through the given points.

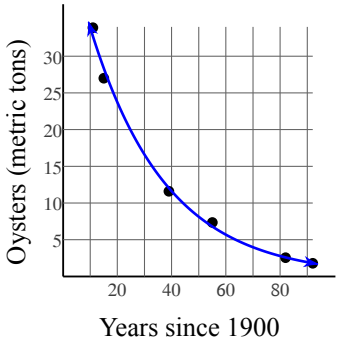
6) through: $(-3, -3)$ and $(2, -5)$

A) $y = x - \frac{21}{5}$ B) $y = -\frac{2}{5}x - \frac{21}{5}$ C) $y = \frac{2}{5}x - \frac{21}{5}$ D) $y = -x - \frac{21}{5}$

7) The National Oceanic and Atmospheric Administration tracks the amount of oysters harvested from the Chesapeake Bay each year:

Years since 1900	Oysters (metric tons)
11	33.9
15	27
39	11.6
55	7.35
82	2.56
92	1.79

This can be modeled by the equation $y = 48.4 \cdot 0.965^x$ where x is the number of years since 1900 and y is the amount of oysters harvested in metric tons.



a) What does the y-intercept of this function represent?

b) Using this model, how many metric tons of oysters were harvested in 1933? Round your answer to the nearest tenth.

A) Y-intercept: The amount of oysters harvested in 1900
14.3 metric tons

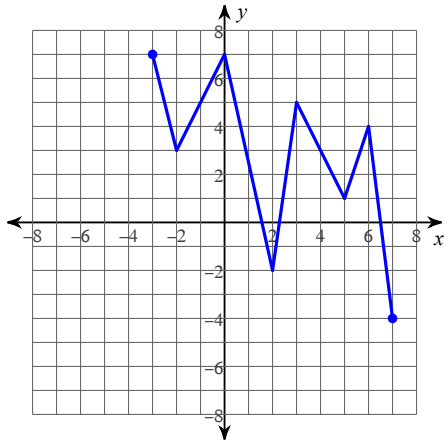
B) Y-intercept: The amount of oysters harvested in 1900
14.9 metric tons

C) Y-intercept: The average number of oysters harvested each year
14.9 metric tons

D) Y-intercept: The amount of oysters harvested in year 0
15.7 metric tons

Each graph represents a relation. Determine the domain and range.

8)



A) Domain: $-3 \le x \le 7$
Range: $-4 \le y \le 7$

B) Domain: $-7 \le x \le 7$
Range: $1 \le y \le 7$

C) Domain: $-7 \le x \le 5$
Range: $-7 \le y \le 1$

D) Domain: $-7 \le x \le 6$
Range: $-6 \le y \le 7$

Evaluate the function for the given value.

9) $f(x) = -x^2 - 2x + 5$; Find $f(-4)$

A) 1 B) −3 C) 7 D) 0

Find the slope of the line.

10) $-6x = 5y - 10$

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

Simplify.

11) $\sqrt{12}$

A) $5\sqrt{3}$ B) $2\sqrt{3}$ C) $3\sqrt{3}$ D) 6

Find the product.

12) $(5k + 3)(4k^2 + 3k + 1)$

A) $49k^3 + 28k^2 - 46k - 7$
B) $48k^3 + 56k^2 - 24k - 20$
C) $21k^3 + 44k^2 - 11k + 56$
D) $20k^3 + 27k^2 + 14k + 3$

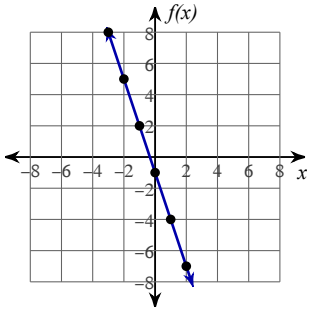
13) $(7k + 3)(8k^2 - 5k + 2)$

A) $14k^3 - 53k^2 + 20k - 21$
B) $42k^3 - k^2 + 17k - 3$
C) $21k^3 + 54k^2 + 48k + 48$
D) $56k^3 - 11k^2 - k + 6$

Graph the function.

14) $f(x) = -3x - 1$

A)



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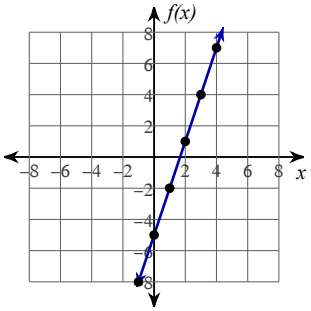

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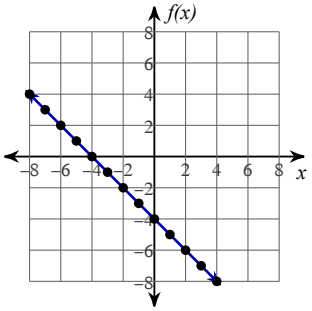
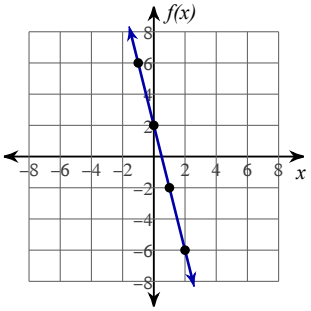


D)



Solve the equation by factoring.

15) $49v^2 - 350v + 340 = 4$

A) $\left\{\frac{1}{2}, -6\right\}$ B) $\left\{-\frac{8}{7}, 8\right\}$ C) $\left\{\frac{8}{7}, 6\right\}$ D) $\left\{-\frac{7}{2}, -6\right\}$

Simplify. Your answer should contain only positive exponents.

16) $\frac{3a^{-2}b^3c^2}{2a^2b^2c^4}$

A) $\frac{3b}{2a^4c^2}$ B) $\frac{a^3}{b^3c^3}$ C) $\frac{a^3}{b^7c}$ D) $\frac{2}{3a^4b^2c^2}$

Factor the common factor out of the expression.

17) $10a^2b^5 + 30a^2b^2$

A) $10a^2b^2(b^3 + 3)$ B) $10a^2b(b^4a + 3b)$

C) $10a^2b^3(5b^3a + 15ab)$ D) $10a^2b^2(10b^4a + 30ab)$

Find the slope of the line.

18) $-5 + x = 0$

A) $\frac{4}{3}$ B) Undefined C) 0 D) $-\frac{4}{3}$

Simplify.

19) $\sqrt{75}$

A) $3\sqrt{3}$ B) 10 C) $5\sqrt{3}$ D) 4

Factor completely.

20) $25p^2 + 145p + 180$

A) $(5p - 7)(p + 6)$ B) $5(5p + 9)(p - 4)$

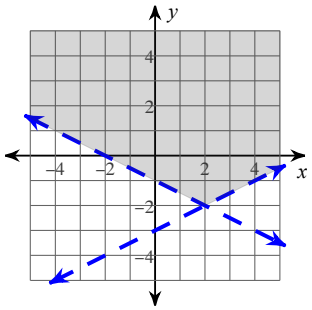
C) $25(p + 9)(p - 4)$ D) $5(5p + 9)(p + 4)$

Sketch the solution to the system of inequalities.

21) $y < 2x - 3$

$y > 1$

A)



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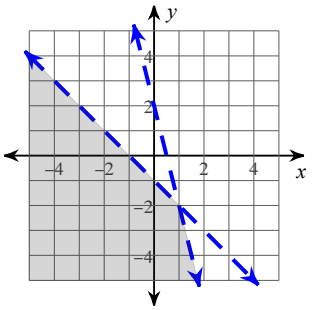

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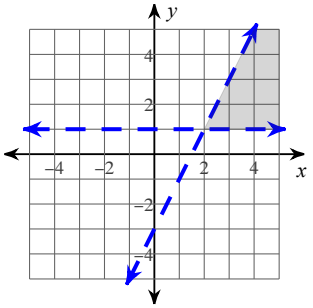

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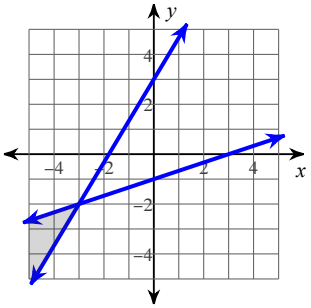
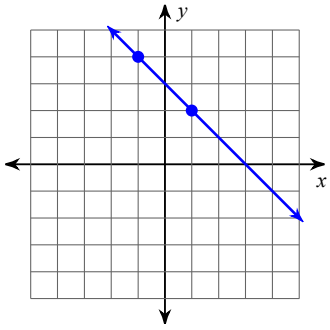


Find the slope of the line.

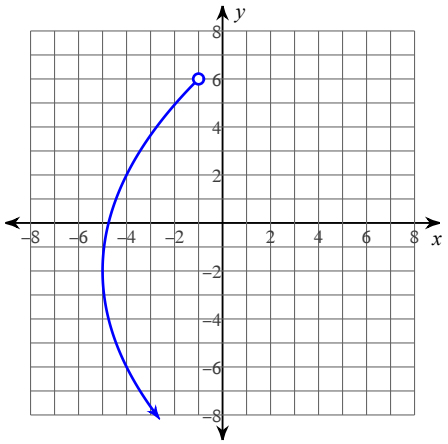
22)



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

The graph represents a relation. Determine if the relation is a function. Then find the domain and range.

23)



A) The relation is not a function.
Domain: $x \le 2$
Range: $y < 6$

B) The relation is not a function.
Domain: $x \ge -5$
Range: $y < 6$

C) The relation is not a function.
Domain: $x \le 3$
Range: $y < 7$

D) The relation is not a function.
Domain: $x \ge -4$
Range: $y > -6$

Solve the proportion.

24) $\dfrac{5}{x-4} = -\dfrac{8}{x+8}$

A) $\{9.3\}$ B) $\{2\}$ C) $\{-9\}$ D) $\{-0.62\}$

Write the slope-intercept form of the equation of the line described.

25) through: $(3, 1)$, perp. to $y = -3x + 2$

A) $y = \dfrac{5}{3}x$ B) $y = -\dfrac{5}{3}x$ C) $y = \dfrac{5}{3}$ D) $y = \dfrac{1}{3}x$

Solve the equation.

26) $|6a - 3| = 51$

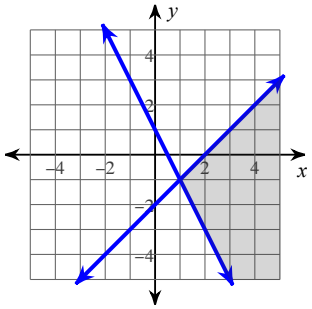
A) $\{9, -8\}$ B) $\left\{\dfrac{8}{9}, -2\right\}$ C) $\{-2, -3\}$ D) $\{2, -6\}$

Sketch the solution to the system of inequalities.

27) $y < \frac{1}{3}x - 2$

$y \le -x + 2$

A)



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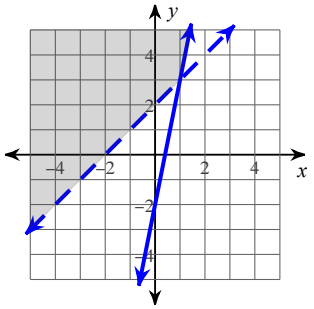

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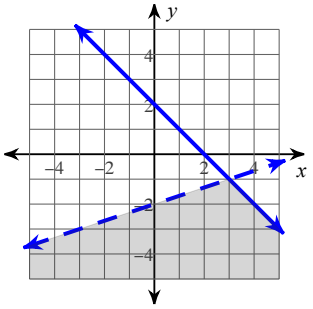

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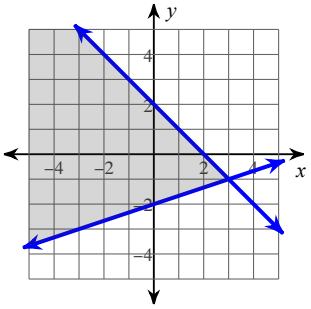


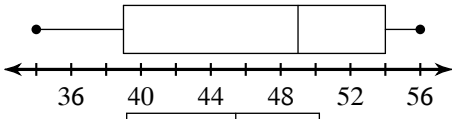
Draw a box-and-whisker plot for the data set.

28) Test Scores

34 39 53 49 56 42 54

39 54 49 50

A)



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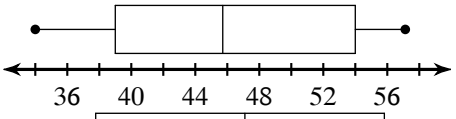
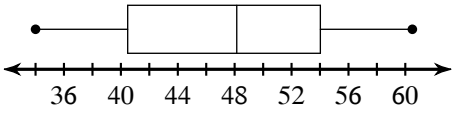
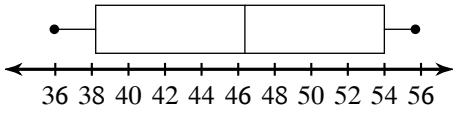


C)



D)



Simplify the expression.

29) $-8x(8 + 4x) - 2(3x + 5)$

A) $-70x - 32x^2 - 10$

B) $5x^2 + 25x - 10$

C) $5x^2 + 24x - 10$

D) $5x^2 + 16x - 10$

Solve the equation for the indicated variable.

30) $u + kx = yx$, for x

A) $x = \dfrac{-k - y}{u}$ B) $x = \dfrac{u}{-k + y}$ C) $x = -uk + uy$ D) $x = u - k + y$