ALGEBRA I ACTIVITIES 11 - 15 ANSWERS

_____
_____
_____

SOL A.3a - Algebra 1 Formative Assessment

Question #1

Which expression is equivalent to $\sqrt{80}$?

A $16\sqrt{5}$

B $5\sqrt{16}$

C $4\sqrt{20}$

D $4\sqrt{5}$ ✓

Question #2

Which expression is equivalent to $\sqrt{75}$?

A $3\sqrt{25}$

B $5\sqrt{15}$

C $25\sqrt{3}$

D $5\sqrt{3}$ ✓

Question #3

The longest length of a sail on Jessica's sailboat is $12\sqrt{40}$ feet long. Which number is equivalent to this length?

A $24\sqrt{10}$ ✓

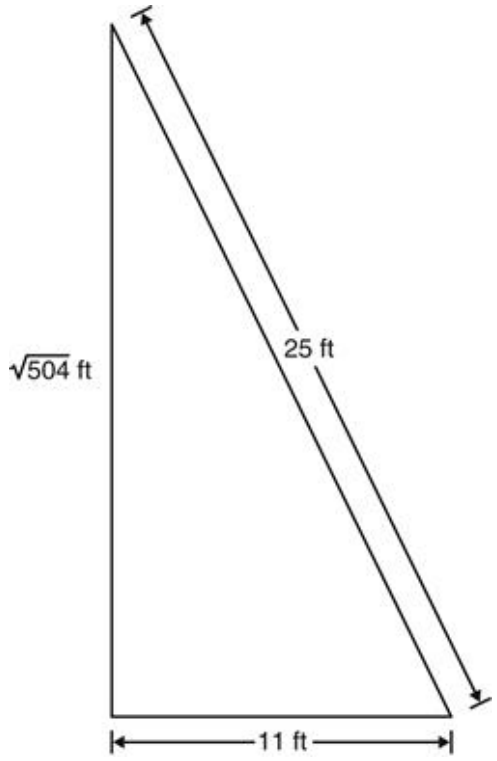
B $24\sqrt{40}$

C $48\sqrt{10}$

D $48\sqrt{40}$

Question #4

A 25-foot ladder is leaning against the top of a gymnasium building. The bottom of the ladder is 11 feet from the building, as shown in the diagram below.



Which expression is equivalent to $\sqrt{504}$ feet, the height of the gymnasium building?

A $6\sqrt{14}$ feet ✓

B $14\sqrt{6}$ feet

C $14\sqrt{36}$ feet

D $36\sqrt{14}$ feet

Question #5

$\sqrt{64x^{16}} =$

A $8x^4$

B $8x^8$ ✓

C $32x^4$

D $32x^8$

Question #6

A square has an area of 20 square feet. What is the length of a side of the square, in feet?

A $2\sqrt{5}$ ✓

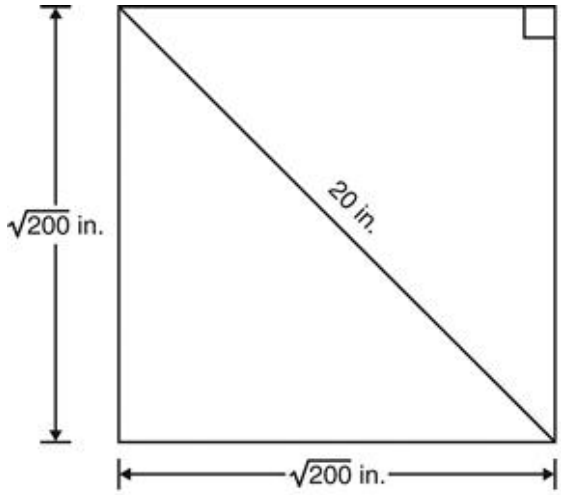
B 5

C $4\sqrt{5}$

D 10

Question #7

A square checkerboard with diagonals of 20 inches has side lengths of $\sqrt{200}$ inches, as shown below.



Which expression is equivalent to the side length of the checkerboard?

A $2\sqrt{10}$ inches

B $10\sqrt{2}$ inches ✓

C $2\sqrt{100}$ inches

D $100\sqrt{2}$ inches

_____
_____
_____

SOL A.3b & c - Algebra 1 Formative Assessment

Question #1

Which represents the solution to $x^3 = 512$?

A $x = \sqrt[3]{512}$ ✓

B $x = 512^3$

C $x = 512^2$

D $x = \sqrt{512}$

Question #2

What number is $\sqrt[3]{64}$ equivalent to?

A 4 ✓

B 8

C 16

D $21\frac{1}{3}$

Question #3

Erin knows that the length of the side of her square garden, in feet, is twice the square root of 121 or $2(\sqrt{121})$. What is the length of Erin's garden?

A 11 feet

B 22 feet ✓

C 242 feet

D 484 feet

Question #4

What is the value of this expression?

$$3^2 \times (\sqrt{144} - 3) + 6$$

A 60

B 87 ✓

C 108

D 135

Question #5

What is the value of $\sqrt[3]{27}$?

A 3 ✓

B 9

C 24

D 81

Question #6

Evaluate $\sqrt{9}(4^2 \times (-3)) + |2^3 \times (-3)|$.

A -168

B -120 ✓

C -54

D -48

Question #7

Simplify the expression $\sqrt{9} + 2^3$. Ex 11 **1**

Question #8

Simplify the expression $7^2 - \sqrt{25}$. Ex 44 ***1***

Question #9

¿Cuál representa la solución a $x^3 = 512$**?**

A $x = \sqrt[3]{512}$

B $x = 512^3$

C $x = 512^2$

D $x = \sqrt{512}$

Question #3

The formula $A = lw$ is used to calculate the area A of a rectangular surface using the length (l) and the width (w) of the surface. Which formula could be used to find w in terms of A and l?

A $w = \frac{l}{A}$

B $w = \frac{A}{l}$ ✓

C $w = Al$

D $a = Al$

Question #4

Tickets for a field trip cost $5 for students and $8 for adults. The total amount paid for tickets C can be found using the equation below, where s is the number of students who attend, and a is the number of adults.

$$C = 5s + 8a$$

Which equation is equivalent when solved for s in terms of C and a?

A $s = \frac{C}{5} - 8a$

B $s = \frac{C}{5} + 8a$

C $s = \frac{C - 8a}{5}$ ✓

D $s = \frac{C + 8a}{5}$

Question #5

The formula for the area of a trapezoid is $A = \frac{h}{2}(b_1 + b_2)$. Which equation correctly describes the height, h?

A $h = \frac{A}{2(b_1 + b_2)}$

B $h = \frac{2A}{b_1 + b_2}$ ✓

C $h = 2A - b_1 - b_2$

D $h = \frac{A}{2} - b_1 - b_2$

Question #6

Select all the equations that are equivalent to $A = \frac{1}{2}bh$.

A $b = \frac{2A}{h}$ 1

B $b = \frac{A}{2h}$ -1

C $h = \frac{2b}{A}$ -1

D $h = \frac{2A}{b}$ 1

E $h = 2Ab$ -1

Question #7

Which equation is equivalent to $2x + 3y = 12$?

A $y = \frac{2}{3}x + 4$

B $y = -\frac{2}{3}x + 4$ ✓

C $y = -\frac{2}{3}x + 12$

D $y = \frac{2}{3}x + 12$

Question #8

A student wants to solve for y in the equation below.

$$5(y + 3) = 10x$$

Which operation should be performed first to solve for the variable y using the fewest possible steps?

A multiplying $10x$ by 5

B dividing both sides by 5 ✓

C multiplying $(y + 3)$ by 5

D subtracting 3 from both sides

Question #9

Select all the equations that are equivalent to $A = \frac{a+b}{2} \times h$.

A $h = \frac{2A}{a+b}$ 1

B $a = \frac{2A-b}{h}$ -1

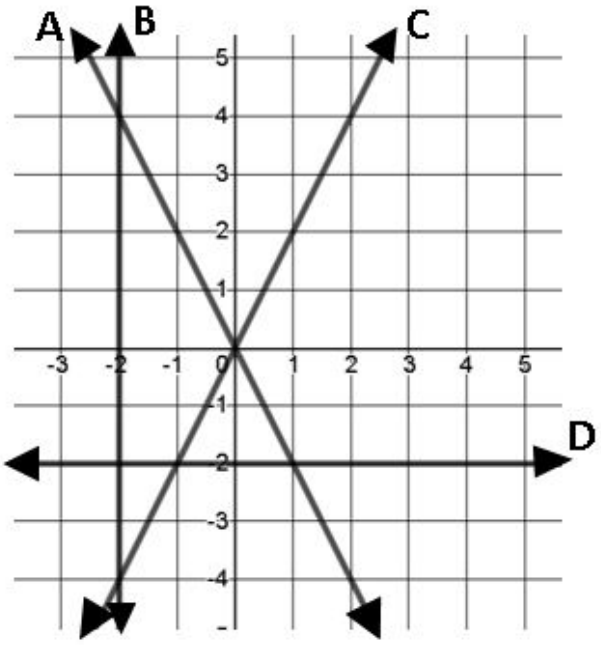
C $a = \frac{2A}{h} - b$ 1

D $b = \frac{2A-a}{h}$ -1

E $b = \frac{2A}{h} - a$ 1

Question #2

Which line best represents the equation *x* = *-2*



A Line A

B Line B ✓

C Line C

D Line D

Question #3

Which equation represents a vertical line through the point (7, 4)?

A *y* = *7*

B *y* = *4*

C *x* = *7* ✓

D *x* = *4*

Question #6

Line *m* passes through the point $(-1, 1)$ and has a slope of $\frac{4}{7}$. What is the equation of Line *m* in standard form?

A $4x - 7y = -11$ ✓

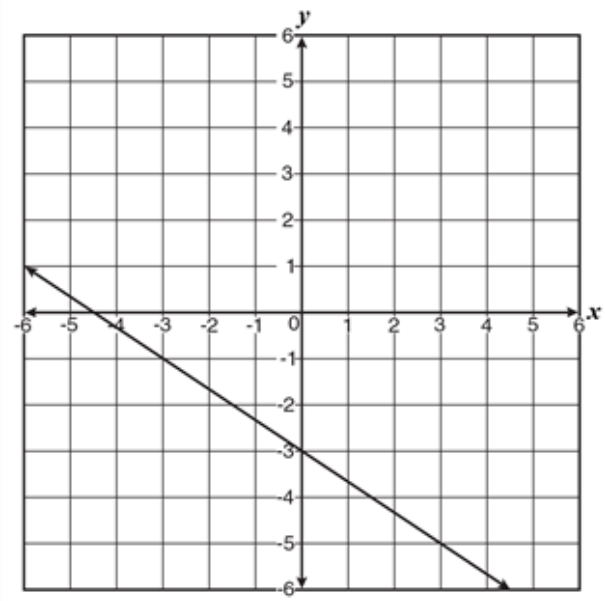
B $4x - 7y = 11$

C $7x - 4y = -11$

D $7x - 4y = 11$

Question #7

The graph of a line is shown below.



Which of the following linear equations is a line that passes through the point $(-3, 3)$ and is parallel to the given line?

A $y = \frac{3}{2}x + 1$

B $y = \frac{3}{2}x - 1$

C $y = -\frac{2}{3}x - 1$

D $y = -\frac{2}{3}x + 1$ ✓

Question #8

Hannah noticed that the number of dog barks that are heard in her video game is dependent on the number of cars that drive down a neighborhood street in the game.

Number of Dog Barks in Terms of Number of Cars

Number of Cars	Number of Dog Barks
5	15
10	25
15	35
20	45
25	55
30	65
35	75

Which equation BEST represents the number of dog barks (*b*) in terms of the number of cars that drive down the street (*c*) during the game?

A $b = 2c + 2$

B $b = 2c + 5$ ✔

C $c = 5b + 2$

D $c = 2b + 5$

Question #9

A line is parallel to the *x*-axis and passes through (2, 3). Which answer choice shows the line's equation and correct slope?

A $x = 2$; m = undefined

B $y = 2$; m = undefined

C $x = 3$; $m = 0$

D $y = 3$; $m = 0$ ✔

Question #10

A line perpendicular to the *y*-axis also contains the point (–5, 6). What is its equation and slope?

A $x = -5$; $m = 0$

B $x = -5$; $m =$ undefined

C $y = 6$; $m = 0$ ✓

D $y = 6$; $m =$ undefined

_____
_____
_____

SOL A.7d - Algebra 1 Formative Assessment

Question #1

Look at the equation below.

$$y = -Ax + 9$$

For which value of A will the graph of the equation have an x-intercept of $\frac{3}{2}$?

A $\frac{3}{2}$

B 6 ✓

C $\frac{15}{2}$

D 9

Question #2

Given the equation $-2x + 3y = 18$, what are the x-intercept and y-intercept of the graph?

A x-intercept $= -9$; y-intercept $= 6$ ✓

B x-intercept $= -6$; y-intercept $= 9$

C x-intercept $= 6$; y-intercept $= -9$

D x-intercept $= 9$; y-intercept $= -6$

Question #3

What point is the *x*-intercept of the line represented by the equation $x - y = -2$?

A $(-2, 0)$ ✓

B $(-1, 0)$

C $(1, 0)$

D $(2, 0)$

Question #4

What is the equation of the line that has an *x*-intercept of (6, 0) and a *y*-intercept of (0, 5)?

A $y = \frac{6}{5}x + 5$

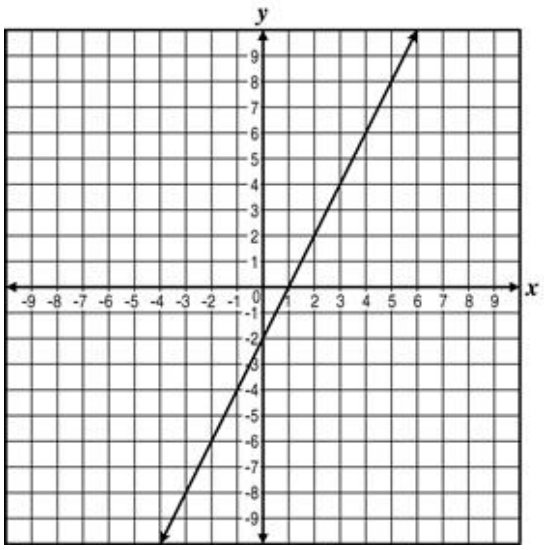
B $y = \frac{5}{6}x + 5$

C $y = -\frac{5}{6}x + 5$ ✓

D $y = -\frac{6}{5}x + 5$

Question #5

What is the *y*-intercept of the line graphed below?



A −2 ✓

B 0

C 1

D 2

Question #6

The table below shows the depth of water in a bathtub as it is being filled over time. The data can be modeled by a linear equation where *x* is the elapsed time in minutes and *y* is the depth of the water in inches.

Filling Bathtub

Elapsed Time, *x* (min)	Depth of Water, *y* (in.)
1	3
2	5
3	7
4	9
5	11
6	13

What does the *y*-intercept of the linear equation that models the data indicate?

A The water level rose at a rate of 1 inch per minute.

B The tub was empty when the elapsed time was at 0 minutes.

C ✓ There was 1 inch of water in the tub when the water was turned on.

D The water was running for 2 minutes before the depth was measured.

Question #7

Look at the equation below.

$$y = -Ax + 6$$

For what value of *A* will the graph of the equation have an *x*-intercept at (2, 0)?

A 6

B 4

C ✓ 3

D 2

Question #8

Which point is the *x*-intercept of the line represented by the equation $4x - y = -8$?

A $(-2, 0)$ ✓

B $(-1, 0)$

C $(4, 0)$

D $(8, 0)$

Question #9

One function, $f(x)$, is defined as $f(x) = (x+4)^2 - 3$. A second function, $g(x)$, is a parabola that passes through the points shown in the table.

x	0	1	2	3	4	5
***g*(*x*)**	4	3	4	7	12	19

What is the absolute value of the difference of the *y*-intercepts of $f(x)$ and $g(x)$?

A 6

B 9 ✓

C 15

D 17

Question #10

What is the *x*-intercept of the graph of $3x - y + 6 = 0$?

A $(-2, 0)$ ✓

B $(0, -6)$

C $(0, 6)$

D $(2, 0)$

Question #3

Brad threw a baseball off a cliff. The height *h*, of the ball, in feet, is modeled by the function below, where *t* represents time, in seconds, after the ball has been thrown.

$$h(t) = -16t^2 + 48t + 50$$

What is the height of the baseball after 1 second?

A 50 feet

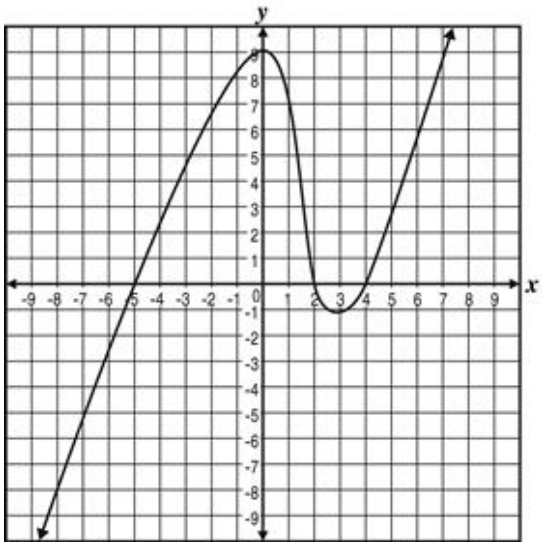
B 66 feet

C 82 feet ✓

D 98 feet

Question #4

The graph of a function is shown below.



What is the approximate solution if $x = -5$?

A -5

B -1

C 0 ✓

D 1

Question #5

The table shows values of *n* and *f(n)* for the equation $f(n) = \frac{n(n+3)}{2}$.

n	*f(n)*
1	2
2	5
3	9
4	?

What is the value of *f(n)* when $n = 4$?

A 12

B 13

C 14 ✓

D 28

Question #6

If $f(x) = 2x^2 - x$, what is $f(-6)$?

A -78

B -30

C 18

D 78 ✓

Question #7

Jasmine plans to order poster-sized photographs from an online company. She found a table on the company's website that shows the total cost based on how many posters are ordered.

Number of Posters	Total Cost (in dollars)
1	$8
2	$14
3	$20
4	$26
5	?

What will Jasmine's total cost be in dollars if she orders 5 posters? Ex 32 **1**

Question #8

Select all of the points that are on the graph of the function $f(x) = 5x + 12$.

A (– 2, 22) -1

B (– 1, 7) 1

C (0, 17) -1

D (3, 15) -1

E (4, 32) 1

Question #9

Select all of the points that are on the graph of the function $f(x) = 8 - 3x$.