

Algebra 1
Unit 3: Creating Linear Functions

Summative Assessment

1. Correct answer: C

Which equation in standard form has a graph that passes through the point (-4, 2) and has a slope of $\frac{9}{2}$?

- a. $9x - 2y = 36$
- b. $9x - 2y = 26$
- c. $9x - 2y = -40$**
- d. $9x - 2y = -10$

$\Rightarrow Ax + By = C$

$\begin{matrix} y \\ \nearrow \\ x \end{matrix} \quad y = \frac{9}{2}x + 20$

$y = m(x+b)$
 $a = \frac{9}{2}(-4) + b$
 $2 = -18 + b$
 $+18 \quad +18$
 $\underline{24} = b$

$9x - 2y = -40$

$9x - 2y = -40$

$-\frac{9}{2}x + y = 20$

2. Correct answer: C

Which equation in standard form has a graph that passes through the point (1, 24) and has a slope of -0.6 ?

- a. $3x + 5y = 125$
- b. $3x + 5y = 77$
- c. $3x + 5y = 123$**
- d. $3x + 5y = 115$

$24 = -0.6(\cdot) + b$
 $\frac{16}{} \quad + .6$
 $\underline{24.6} = b$

\downarrow changes to fraction $\frac{123}{5}$

$3x + 5y = 123$

$y = -\frac{3}{5}x + \frac{123}{5} + 5 \left(+\frac{3}{5}x + y = \frac{123}{5} \right)$
 $\frac{123}{5} \quad + \frac{25}{5}$
 $\underline{148} = 5y$

$3x + 5y = 148$

$9x - 2y = -40$

3. Correct answer: d

What is the equation of the line that has a slope of 0 and passes through the point (6, -8)?

- a. $x = 6$
- b. $y = 6$
- c. $x = -8$
- d. $y = -8$**

\rightarrow means $y = \#$
 \rightarrow have y -value

*no work

4. Correct answer: C

Which of the following is equivalent to $2x + 3y = 127$ - change to slope-intercept form $y = mx + b$

- a) $y = -2x + 4$
- b) $y = 3x - 4$
- c) $y = -\frac{2x}{3} + 4$**
- d) $y = \frac{2x}{3} + 12$

$\frac{-2x}{3} + 3y = 127$
 $\frac{-2x}{3} \quad -\frac{-2x}{3}$
 $\underline{\frac{3y}{3}} = -\frac{2x}{3} + \frac{127}{3}$

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

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5. Correct answer: a

An organization has a monthly budget of x dollars. Every month \$3,500 is spent on salaries. One-third of the remaining budget is spent on monthly activities. Which function can be used to find the amount in dollars spent on monthly activities?

a) $f(x) = \frac{(x-3,500)}{3}$

b) $f(x) = \frac{x+3,500}{3}$

c) $f(x) = 3,500 - \frac{x}{3}$

d) $f(x) = 3,500 + \frac{x}{3}$

6. Correct answer: d

The table represents some points on the graph of a linear function.

x	-6	-4	-2	0	2
y	-10	-5	0	5	10

starting point $x=0$

Which function represents the same relationship?

$$\frac{y-a-y_1}{x-a-x_1} = \frac{-5-(-10)}{-4-(-6)} = \frac{5}{2} = 2.5$$

- a. $h(x) = 5x + 2.5$
- b. $h(x) = 2.5x - 2$
- c. $h(x) = 3x + 5$
- d. $h(x) = 2.5x + 5$

7. In an electrical circuit, the voltage across a resistor is directly proportional to the current running through the resistor. If a current of 12 amps produces 480 volts across a resistor, how many volts would a current of 1.5 amps produce across an identical resistor?

Correct answer: 60 volts

$$\frac{12}{480} = \frac{1.5}{x}$$

$$12x = \frac{720}{12}$$

$$x = 60$$

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8. Correct answer: b

The value of y varies directly with x . Which function represents the relationship between x and y if $y = \frac{10}{3}$, when $x = 30$?

a. $y = 200x$

b. $y = \frac{1}{9}x$

c. $y = \frac{100}{3}x$

d. $y = \frac{2}{3}x$

$K = 2/9$

$y = Kx$
 $3 \cdot \frac{20}{3} = K(30) \cdot 3$
 $20 = \frac{90K}{3}$

9. In a trip across Texas, the distance of the trip is directly proportional to the time spent in the car. If the distance to Lubbock is 330 miles and takes 5 hours, how long would it take to drive to Austin which is 200 miles away?

Correct answer: approximately 3 hours

~~$\frac{5}{330} = \frac{x}{200}$~~

$\frac{1000}{330} = \frac{330x}{330}$

$x = 3.03$

$P = 2d + 2w$

$\frac{P - 2d}{-2d} = \frac{2w}{-2d}$

$\frac{P - 2d}{a} = \frac{2w}{a}$

10. Correct answer: b

Which of the following is equivalent to $P = 2l + 2w$?

a. $w = \frac{P-2l}{2}$

b. $w = \frac{P-2l}{2}$

c. $w = 2(P - 2l)$

d. $w = 2(P + 2l)$