

Algebra 1-2: Unit 4 Linear Equations Unit Test REVIEW

Name: _____ Period: _____

1) Write an equation of the line in **slope intercept form** given

the following information.

a. Slope: $-\frac{1}{3}$; y-intercept $(0, -2)$

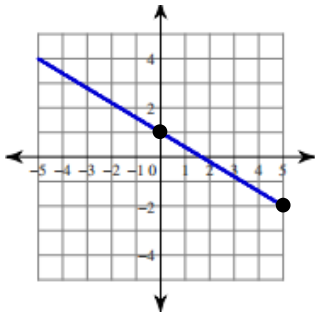
c. Slope: -2 ; y-intercept $(0, 5)$

intercept

b. Slope: $\frac{4}{5}$; y-intercept $(0, 0)$

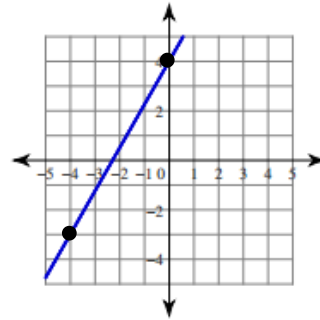
Given the graph

d.



f. Passes through $(2, 7)$ and $(1, -4)$

e.



g. Passes through $(-3, -4)$ and $(3, -2)$

For problems 2-7, write a linear model to match each situation.

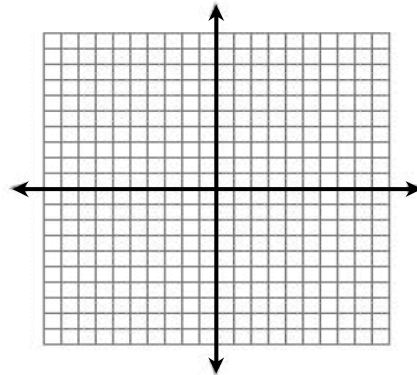
- 2) Jimmy is saving up to buy a bicycle. His grandma gave him \$56 and he is adding \$5 per week to the bike savings account. Write an equation in **slope-intercept form** that gives the savings (y) in terms of the number of weeks (x).
- 3) A plane is flying at 1500 feet. It descends at 125 feet per second Write an equation in **slope-intercept form** giving the plane's elevation, y , in terms of the number of seconds, x .
- 4) A company manufactured 1200 Gizmo Gadgets during month 1. At the end of month 5 they had manufactured 5800. Write an equation in **point-slope form** that gives the number of toys manufactured (y) in terms of month (x).
- 5) Between 2000 and 2010, the population of Meierville increased by 6000 people per year. In 2005, the population was 116,000. Write an equation

- 6) You have \$15 to spend on snacks at the movies. You can buy popcorn (x) for \$5 per bag and soda (y) for \$3 per cup. Write an equation in **standard form** that models the possible combinations of snacks you can afford.
- 7) The store at which Andy usually shops is having a sale. Roast beef costs \$4 a pound and shrimp costs \$10 a pound. Write an equation in **standard form** that models the possible combinations of Roast beef (x) and shrimp (y) that he can buy for \$96.

8) Find the x and y intercept then graph the linear equation.

$$-3x + 4y = 12$$

x-intercept: (,) y intercept: (,)



9) If a hockey team earns 20 points during the season, they will make the playoffs. Teams earn 2 points for a win and $\frac{1}{2}$ point for a tie. The possible numbers of wins x and ties y to make the playoffs can be modeled by the equation $2x + 0.5y = 20$

a) What is the x-intercept of the graph of this equation? x-intercept: (_____, _____)

What does it mean in the situation?

b) What is the y-intercept of the graph of this equation? y-intercept: (_____, _____)

What does it mean in the situation?

c) Circle **ALL** of the following combinations of dimes and quarters that satisfy the equation $2x + 0.5y = 20$

(8, 8) (3, 28) (12, 7) (5, 20) (4, 9)

10) Identify the current form of each equation. Then, rewrite each equation in slope-intercept form.

a) $y - 10 = \frac{1}{2}(x - 6)$

b) $y + 5 = -3(x - 1)$

c) $3x - 2y = 18$

d) $6x + 2y = -48$

Current
Form:

Rewritten
In Slope-
Intercept Form:

11) Circle **ALL** of the following equations that are equivalent.

$y - 11 = 2(x - 8)$ $2x - y = 5$ $y - 7 = 2(x - 6)$ $y - 15 = -2(10 - x)$ $4x - 8y = 40$ $y = 2(x - 2.5)$

12) The relationship between study time in minutes (x) and response speed in seconds (y) on a memory test can be modeled with the equation $y = -15.25x + 100.25$

- What is the slope? _____
- What does the slope represent in the context of the problem?

- What is the y-intercept? _____
- What does the y-intercept represent in the context of the problem?

13) Match the correlation coefficients to the appropriate graph:

13a) _____ 13b) _____ 13c) _____ 13d) _____ 13e) _____

A. $r = 0$
 B. $r = .3$
 C. $r = -.3$
 D. $r = .7$
 E. $r = -.7$

14) Describe the relationships shown in the graphs and use the given points to write an equation in **slope-intercept form** for the line of best fit.

