

Name: Kelly

Write an equation of a line, in slope-intercept form, given the following information.

1. $m = -4, b = 3$ $y = -4x + 3$	2. $m = 2, (5, 2)$ $y = 2x - 8$
3. $m = -2, (-3, -8)$ $y = -2x - 14$	4. contains $(2, 0)$ and $(0, 10)$ $y = -5x + 10$
5. x intercept is -2 , y-intercept is -1 $y = \frac{1}{2}x - 1$	6. contains $(2, -4)$ and $(3, 1)$ $y = 5x - 14$

Write an equation in slope-intercept form from each line shown or described.

7. u $y = \frac{1}{3}x - 5$	
8. the line parallel to line r that contains $(1, -1)$ $y = x - 2$	

15. Marty is spending money at the average rate of \$3 per day. After 14 days he has \$68 left. The amount left depends on the number of days that have passed.

a. Write an equation to model the situation. $m = 3$ $(14, 68)$

$$y = -3x + 110$$

b. Use your equation to find the amount of money he has after 20 days.

$$y = 50$$

16. Suppose a 5-minute overseas call costs \$5.91 and a 10-minute call costs \$10.86. The cost of the call and the length of the call are related.

a. What is the cost y of a call of x minutes duration? (Assume this is a constant-increase situation)

$(5, 5.91)$ $(10, 10.86)$

$$y = .99x + .96$$

b. How long can you talk on the phone if you have \$12 to spend?

$$y = 12.84$$

17. Suppose you receive \$100 for a graduation present, and you deposit it in a savings account. Then each week thereafter, you add \$5 to the account but no interest is earned. The amount in the account is a function of the number of weeks that have passed.

a. Find an equation for the amount y you have after x weeks.

$$y = 5x + 100$$

b. Use your equation to find when you will have \$310 in the account

$$x = 42 \text{ weeks}$$

Determine if each function is linear. Explain.

18. $3x^2 + 4 = y$ Not linear, x is squared	19. $3x + 5y = 20$ $y = -\frac{3}{5}x + 4$ yes, can be written in $y = mx + b$ form
-----------------------------------------------------	----------------------------------------------------------------------------------------------

9. What is the difference between a relation and a function?

Any set of ordered pairs is a relation.
A function is only when x values in a relation are unique.

Determine if each relation is a function, one-to-one, discrete, or continuous. Then identify the domain and range.

10. $\{(2, -3), (4, 5), (-3, 6)\}$ function, 1 to 1 discrete $D = \{x \mid x = -3, 2, 4\}$ $R = \{y \mid y = -3, 5, 6\}$	11. function, one to one continuous $D = \{x \mid x = \mathbb{R}\}$ $R = \{y \mid y = \mathbb{R}\}$
12. function, Not one to one continuous $D = \{x \mid x = \mathbb{R}\}$ $R = \{y \mid y \geq 0\}$	13. function Not one to one discrete $D = \{x \mid x = 1, 2, 3, 4, 5\}$ $R = \{y \mid y = 3, 4, 5, 6\}$

14. An airplane 30,000 feet above the ground begins descending at the rate of 2000 feet per minute. Assume the plane continues at the same rate of descent. The plane's height and minutes above the ground are related to each other.

a. Write an equation to model the situation.

$$y = -2000x + 30000$$

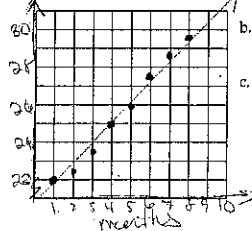
b. Use your equation to find the altitude of the plane after 5 minutes.

$$y = 20,000 \text{ ft}$$

20. Each month you have measured a baby alligator. The table shows your measurements.

Month, x	Jan	Feb	Mar	Apr	May	June	July	Aug
Length (in), y	22.0	22.5	23.5	25.0	26.0	27.5	28.5	29.5

a. Make a scatter plot of the data and draw a line of best fit. Let $x = 1$ represent January.



b. Choose two ordered pairs that best represent your data.

$(4, 25.0)$ $(5, 26.0)$

c. Write the equation of the line.

$$y = x + 21$$

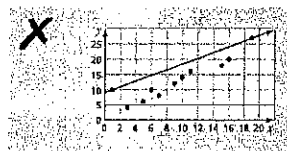
d. Use your equation to predict the length in December.

$$y = 33 \text{ in}$$

e. Using your calculator, write the equation for the line of regression for this information.

$$y \approx 1.1369x + 20.4464$$

21. ERROR ANALYSIS Describe and correct the error in drawing the line of best fit.



The line of best fit should have a higher slope and be closer to more data points.