

Blue

Cumulative Review
Chapters 5 & 6

Name Key

Diff-Algebra

#3

Write a function rule for the table.

x	f(x)
1	10
2	13
3	16
4	19

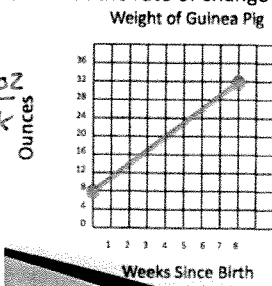
$f(x) = 3x + 7$

#6

Find the constant rate of change indicated by the graph. Then, explain what the rate of change means for the situation.

$$\frac{32\text{oz} - 8\text{oz}}{8\text{wk} - 0\text{wk}} = \frac{24\text{oz}}{8\text{wk}}$$

$$= \frac{3\text{oz}}{1\text{wk}}$$

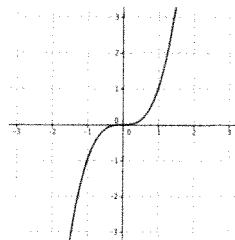


Guinea pig gains 3 ounces each week.

#1

Determine if the relation is a function. Explain how you know.

Function
Passes vertical line test.



Each input has exactly one output.

#4

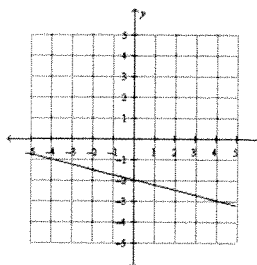
Write a function rule for the table.

x	f(x)
-1	8
0	5
1	2
2	-1

$f(x) = -3x + 5$

#7

Use the graph to answer the following questions:



Identify the y-intercept.

$(0, -2)$

Identify the slope.

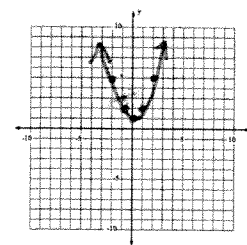
$m = -\frac{1}{4}$

#2

Model the function with a table of values and a graph.

$f(x) = x^2 + 1$

x	f(x)
-2	5
-1	2
0	1
1	2
2	5



Find the range of the function in the graph.

Range: 1, 2, 5

#5

Calculate the slope of the line containing $(-1, 5)$ and $(3, 5)$.

$$m = \frac{5-5}{-1-3} = \frac{0}{-4} = 0$$

zero slope

~~#8~~
#9

Graph the linear equation (graphs at end). Tell what form the equation is in.

$y = -\frac{5}{3}x + 4$

$m = -\frac{5}{3} \quad (0, 4)$

#11
~~#9~~

Graph the linear equation
(graphs at end). Tell what form
the equation is in.

$$y - 2 = \frac{3}{4}(x + 1)$$

$$m = \frac{3}{4} \quad (-1, 2)$$

#12

Rewrite the equation in
standard form using integers.

$$y = \frac{4}{3}x + 7$$

$$3\left(-\frac{4}{3}x + y\right) = (7) \cdot 3$$

$$-4x + 3y = 21$$

OR $4x - 3y = -21$

#15

DV
 $\frac{y}{x} = k$

x	y
2	7
6	21
10	35

I.V.
 $xy = k$

Does the data in the table
represent a direct
variation or an inverse
variation?

Direct Variation

Write an equation to
model the data in the
table.

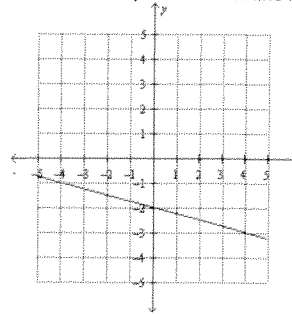
$$y = \frac{7}{2}x$$

$$\frac{7}{2} = \frac{7}{2}$$

$$k = \frac{7}{2}$$

#8
~~#10~~

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



$$y = -\frac{1}{4}x - 2$$

#13

The theater charges \$3 per child and \$5 per adult for each show. Write an equation in standard form relating the amount of children and adults that can go to the theater if you spend \$80. Define your variables.

$x = \# \text{ children}$ $y = \# \text{ adults}$

$$3x + 5y = 80$$

#16

- Suppose y varies inversely with x . Write an equation for the inverse variation.

$$x = \frac{3}{4}, y = 28$$

$$\frac{3}{4} \cdot \frac{28}{1} = k$$

$$21 = k$$

$$xy = 21 \text{ or } y = \frac{21}{x}$$

#10
~~#11~~

A line passes through two points (7, 2) and (5, -6).
Write an equation for the line in **point-slope form**.

Then rewrite the equation in **slope-intercept form**.

$$m = \frac{-6 - 2}{5 - 7} = \frac{-8}{-2} = 4$$

Point-Slope Form: $(5, -6) \quad y + 6 = 4(x - 5)$
 $(7, 2) \quad y - 2 = 4(x - 7)$

Slope-Intercept Form: $y = 4x - 26$

Standard $-4x + y = -26$

#14

D.V.
 $\frac{y}{x} = k$

x	y
2	35
5	14
10	7

I.V.

$xy = k$

$$2 \cdot 35 = 70$$

$$5 \cdot 14 = 70$$

$$10 \cdot 7 = 70$$

$$k = 70$$

$$k = 70$$

$$k = 70$$

$$k = 70$$

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Does the data in the table
represent a direct
variation or an inverse
variation?

Inverse
Variation

Write an equation to
model the data in the
table.

$$y = \frac{70}{x}$$

$$\text{or } xy = 70$$

#17

- Write an equation of the direct variation that includes the point (-8, 26).

$$\frac{26}{-8} = k$$

$$-\frac{13}{4} = k$$

$$\frac{y}{x} = k$$

$$y = -\frac{13}{4}x$$

#18

Write an equation that is **perpendicular** to the given line and passes through the given point.

$$y = -3x + 9$$

(-1, 6)

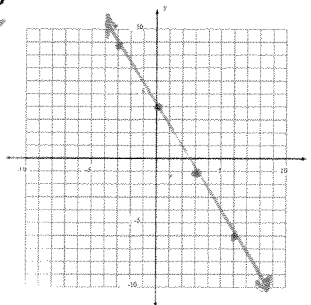
perpendicular slope = $\frac{1}{3}$ negative reciprocal of

$$y - 6 = \frac{1}{3}(x + 1)$$

or $y = \frac{1}{3}x + 6\frac{1}{3}$

For #8

For #9



#19

Write an equation that is **parallel** to the given line and passes through the given point.

$$y = -3x + 9$$

(2, 6)

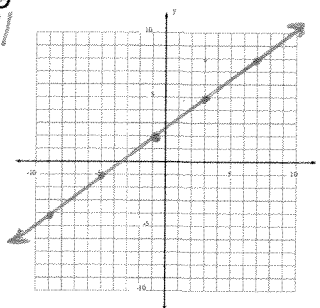
parallel slope = -3 equal to

$$y - 6 = -3(x - 2)$$

or $y = -3x + 12$

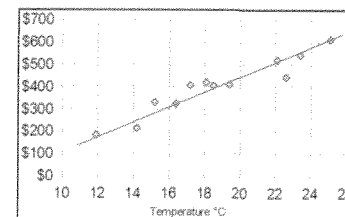
For #9

For #11



#20

Use the graph to write a linear function.



Use your function to predict the amount raised when the temperature is 60 degrees Celsius.

(16°, \$300) (22°, \$500)

$$m = \frac{\$500 - \$300}{22 - 16} = \frac{\$200}{6^\circ\text{C}} \approx \frac{\$33.33}{1^\circ\text{C}} = \frac{\$33\frac{1}{3}}{1^\circ\text{C}}$$

$$(16, 300) \quad y - 300 = 33\frac{1}{3}(x - 16)$$

$$y - 300 = 33\frac{1}{3}(60 - 16)$$

$$y - 300 = \frac{1000}{3}(44)$$

$$y - 300 = \frac{44000}{3}$$

$$+ 300 \quad + 300 = \frac{9000}{3}$$

$$y = \frac{53000}{3}$$

$$y = \$17666.67$$