Lessons 2.2 Worksheet

Name: _____

1.) The _____ of a nonvertical line is the ratio of vertical change to horizontal change.

Find the slope of the line passing through the given points. Tell whether the line *rises, falls, is horizontal,* or *is vertical*.

2.) $(2, -4), (4, -1)$

3.) $(-3, -2), (3, -2)$

$m =$ _____ line _____

$m =$ _____ line _____

4.) $(-6, 5), (-6, -5)$

5.) $(5, 1), (8, -4)$

$m =$ _____ line _____

$m =$ _____ line _____

Tell whether the lines are *parallel*, *perpendicular*, or *neither*.

6.) Line 1: through $(3, -1)$ and $(6, -4)$
     Line 2: through $(-4, 5)$ and $(-2, 7)$

7.) Line 1: through $(1, 5)$ and $(3, -2)$
     Line 2: through $(-3, 2)$ and $(4, 0)$

lines are _____

lines are _____

8.) Line 1: through $(-3, 2)$ and $(5, 0)$
     Line 2: through $(-1, -4)$ and $(3, -3)$

9.) Line 1: through $(1, -4)$ and $(4, -2)$
     Line 2: through $(8, 1)$ and $(14, 5)$

lines are _____

lines are _____

10.) An escalator in an airport rises 28 feet over a horizontal distance of 48 feet. What is the slope of the escalator?

11.) A red sea urchin grows its entire life, which can last 200 years. The diagram gives information about the growth in the diameter d of one red sea urchin. What is the average growth rate of this sea urchin over the given period? What will the diameter of the sea urchin be when it is 145 years old?

Growth of Red Sea Urchin
Age 30 Age 110
$d = 11.9$ cm $d = 15.5$ cm

avg. growth rate _____ diameter at 145 years old _____

Tell whether the relation is a function. *Explain.*

12.) $(3, -2), (0, 1), (1, 0), (-2, -1), (2, -1)$

13.) $(-1, -1), (2, 5), (4, 8), (-5, -9), (-1, -5)$
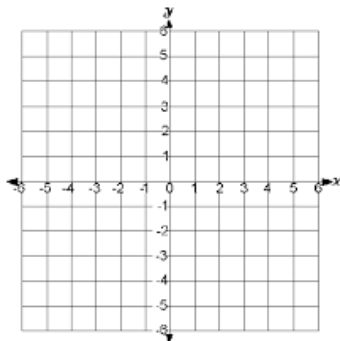
function? _____

function? _____

explain:

explain:
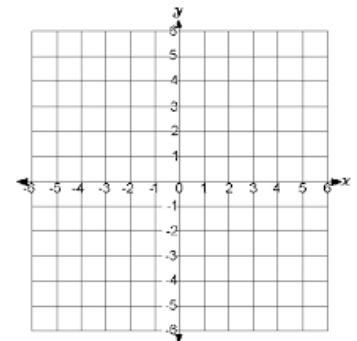
Graph the equation by creating a table of values.

14.) $y = -2x$

x	y

15.) $y = 3x + 1$

x	y

Tell whether the function is linear. Then evaluate the function for the given value of *x*.

16.) $f(x) = x^2 + 1;\ f(-3)$

linear? _____ $f(-3) =$ _____

17.) $f(x) = 6;\ f(2)$

linear? _____ $f(2) =$ _____