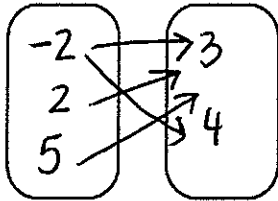


## Day 8 – Review of Functions

- 1) Express the relation  $\{(-2, 3), (2, 3), (5, 3), (-2, 4)\}$  as a mapping diagram.



Is this relation a function? Explain.

no - x repeats

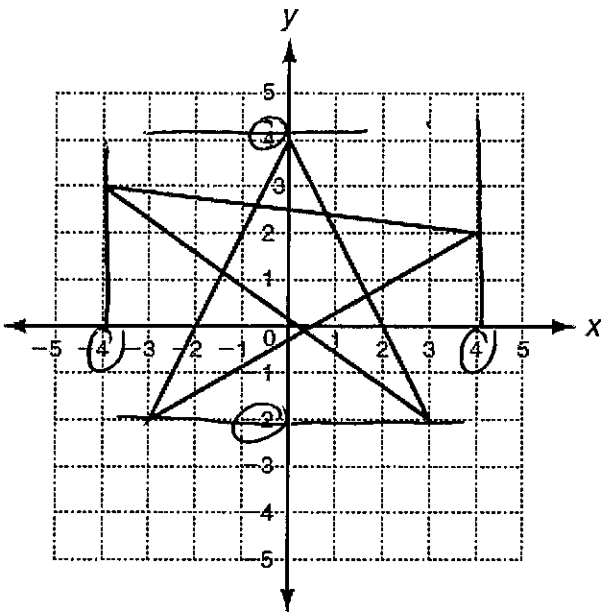
- 2) State the domain and range of the relation below.

x	-1	-0.5	0	0.5
y	2	2	5	6

Domain:  $\{-1, -0.5, 0, 0.5\}$

Range:  $\{2, 5, 6\}$

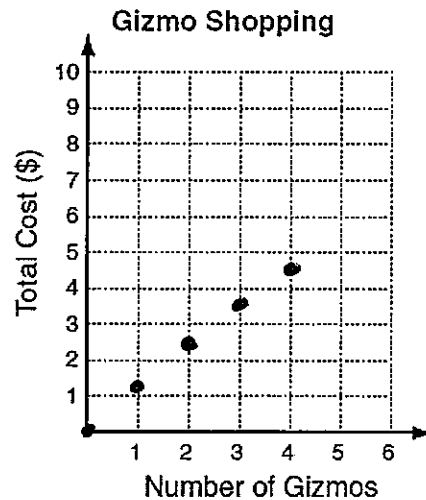
- 3) State the domain and range of the relation below:



$$D: -4 \leq x \leq 4$$

$$R: -2 \leq y \leq 4$$

- 4) A gizmo sells for \$1.25. Sketch a graph to show the total cost if a customer buys 0, 1, 2, 3, or 4 gizmos.



don't connect - there's only 4 points. Connecting them includes the points in between.

5)

Tell whether the relation is a function. Explain.

$\{(4, -1), (3, -2), (2, 1), (1, -2)\}$

yes - x doesn't repeat

If it is a function, state one ordered pair that could be added to the set to make it NOT a function.  $(2, 5)$

If it is not a function, state one ordered pair in the relation that could be removed to make it a function.  $(N/A)$

6)

Determine a relationship between the x- and y-values. Write an equation.

x	1	2	3	4	5
y	2	5	8	11	14

Use function notation:

7) Write a function rule to describe each situation. Use  $f(x)$  notation. Describe an appropriate domain for each function.

A car can travel 32.5 miles per gallon of gasoline.

D: no. of miles

I: no. of gallons

Function Rule:  $f(x) = 32.5x$

Appropriate Domain:  $0 \leq x < \infty$

A lawyer will be paid  $\frac{1}{3}$  of the amount awarded in a lawsuit.

D: amount lawyer is paid

I: amount awarded

Function Rule:  $f(x) = \frac{1}{3}x$

Appropriate Domain:  $0 \leq x < \infty$

The cost of membership is \$21 plus \$5.50 each month.

D: cost of membership

I: no. of months

Function Rule:  $f(x) = 21 + 5.5x$

Appropriate Domain: ~~max~~  $\{0, 1, 2, \dots\}$   
whole numbers

For questions #11-14 below, use the following functions.

$$f(x) = 2x - 5$$

$$g(x) = x^2 - 1$$

$$h(x) = \frac{1}{2}x$$

Find:

11)  $f(3)$

$$f(3) = 2(3) - 5$$

$$\boxed{f(3) = 1}$$

12)  $g(5)$

$$g(5) = 5^2 - 1$$

$$\boxed{g(5) = 24}$$

13)  $h(12)$

$$h(12) = \frac{1}{2}(12)$$

$$\boxed{h(12) = 6}$$

14) the value for which  $f(x) = 3$

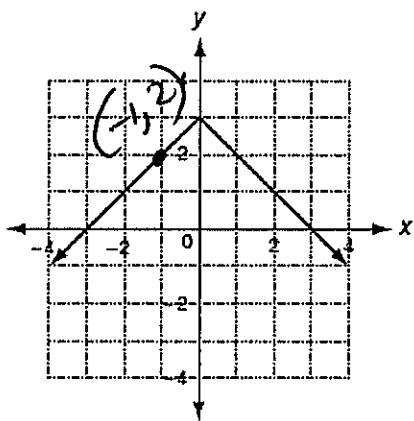
$$f(x) = 2x - 5$$

$$3 = 2x - 5$$

$$8 = 2x$$

$$\boxed{4 = x}$$

15) If  $m(x)$  is graphed below, find  $m(-1)$ .



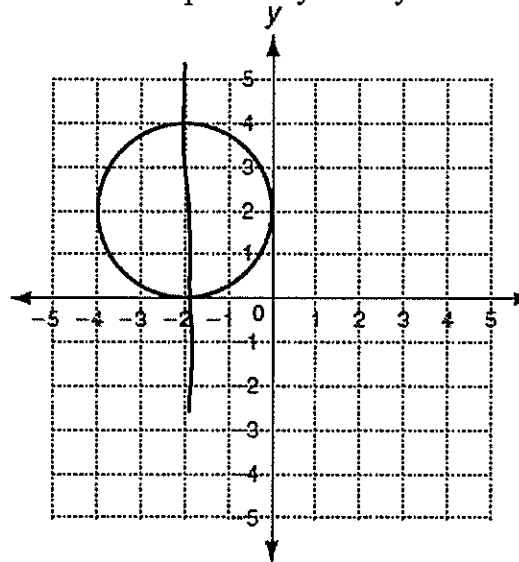
Find the point on  
the graph where  $x = -1$

Read off the  $y$ .

The point is  $(-1, 2)$ .

$$\text{So } m(-1) = \boxed{2}$$

16) Is the relation graphed below a  
function? Explain why or why not.



No, because it fails  
the vertical line test.

A vertical line can touch  
the graph twice

