

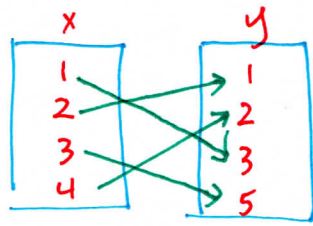
3.2-3.4 Quiz Review Quiz on Thursday!! 10/11

1) State the domain, range, mapping diagram and tell whether a relation is a function or not. Explain.

$$\{(1, 3), (2, 1), (3, 5), (4, 2)\}$$

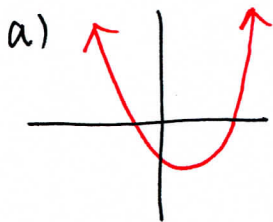
Domain: $\{1, 2, 3, 4\}$; Range: $\{1, 2, 3, 5\}$

Mapping Diagram:

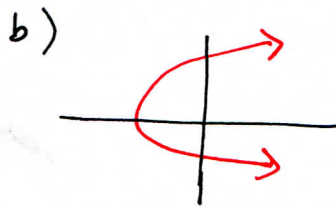


Function because the domain doesn't repeat.

2) Tell whether a graph is a function or not. Explain.

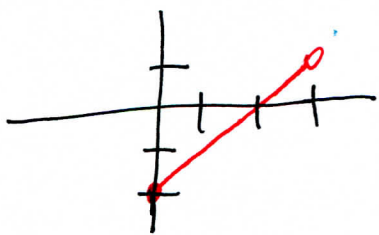


Function, because the graph passes the VLT.



Not a Function, because the graph fails the VLT.

3) To state the domain & range from a graph.



Domain: $\{x \mid 0 \leq x < 3\}$

Range: $\{y \mid -2 \leq y < 1\}$

4) Identify the Independent variable, Dependent variable, & the Function Rule.
(Equation)

a) You want to join a gym. The gym charges \$100 to sign up plus \$30 per month.

Independent: # of month

Dependent: Final cost

Function Rule: $f(x) = 100 + 30x$

Sign-up fee constant
monthly fee \times

Final cost = $f(x)$

b) You want to rent a car. for 1, 2, or 3 hours.
The cost is \$200 deposit plus \$50 per hour.

Independent: # of hours

Dependent: Final cost

Domain: 1, 2, 3

Range: 250, 300, 350

Function Rule: $f(x) = 200 + 50x$

Final cost = $f(x)$

hours = x

deposit: constant

5) Evaluate the function with the given input. (x -value)
plug in the x into the equation.

Evaluate $f(x) = x^2 - 5x + 1$, when $x = -2$

$$f(-2) = (-2)^2 - 5(-2) + 1 = 4 + 10 + 1 = \boxed{15} = f(-2)$$

b) $f(x) + g(x)$, $f(x) - g(x)$, $f(x) \cdot g(x)$

a) Given $f(x) = 2x - 4$; $g(x) = -4x + 5$; Find $f(x) + g(x)$

$f(x) - g(x)$

$$f(x) + g(x) = (2x - 4) + (-4x + 5)$$
$$= \underline{2x} \text{ } \underline{-4} - \underline{4x} \text{ } \underline{+5} = \boxed{-2x + 1}$$

$$f(x) - g(x) = (2x - 4) - (-4x + 5)$$
$$= \underline{2x} \text{ } \underline{-4} + \underline{4x} \text{ } \underline{-5} = \boxed{6x - 9}$$

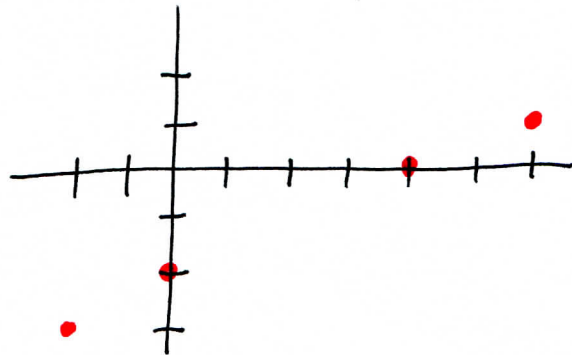
b) Given $f(x) = -3x + 5$; $g(x) = -3$

Find $f(x) \cdot g(x) = -3(-3x + 5) = \boxed{9x - 15}$

7) Graph Functions.

a) $f(x) = \frac{1}{2}x - 2$; $D: \{-2, 0, 4, 6\}$

| x | y |
|----|-------------------------------------|
| -2 | $\frac{1}{2}(-2) - 2 = -1 - 2 = -3$ |
| 0 | $\frac{1}{2}(0) - 2 = 0 - 2 = -2$ |
| 4 | $\frac{1}{2}(4) - 2 = 2 - 2 = 0$ |
| 6 | $\frac{1}{2}(6) - 2 = 3 - 2 = 1$ |



b) $f(x) = x^2 - 2$ Curve

| x | y |
|----|---------------------------|
| -3 | $(-3)^2 - 2 = 9 - 2 = 7$ |
| -2 | $(-2)^2 - 2 = 4 - 2 = 2$ |
| -1 | $(-1)^2 - 2 = 1 - 2 = -1$ |
| 0 | $(0)^2 - 2 = 0 - 2 = -2$ |
| 1 | $(1)^2 - 2 = 1 - 2 = -1$ |
| 2 | $(2)^2 - 2 = 4 - 2 = 2$ |
| 3 | $(3)^2 - 2 = 9 - 2 = 7$ |

