

What is a function?

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A Function is

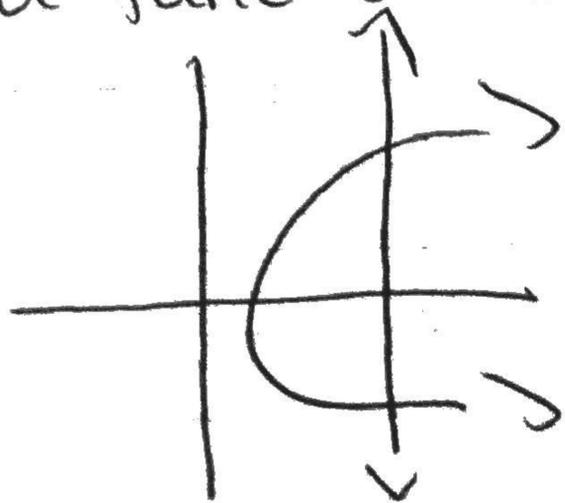
• Lines, curves, parabolas

A Function is not

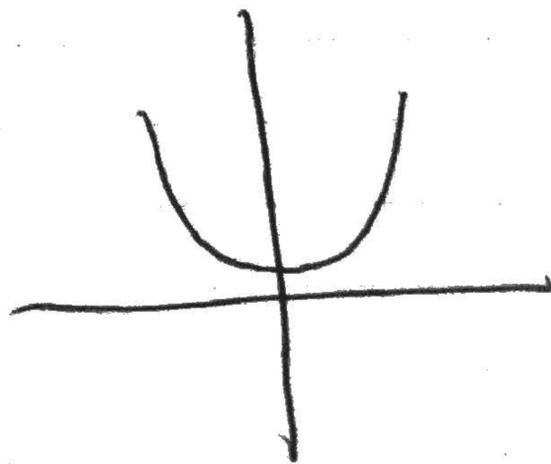
an x that has 2 y values

Function: a relationship where each x -value has exactly one y -value.

Vertical line test: If a vertical line intersects the graph more than once, the relation is NOT a function.



Not a function



put in calculator

$$\text{Ex 1: } f(x) = 3x - 2$$

$$x=1 \quad f(1) = 3(1) - 2$$

$$f(1) = 3 - 2$$

$$f(1) = 1$$

$$x=4 \quad f(4) = 3(4) - 2$$
$$= 12 - 2$$

$$\boxed{f(4) = 10}$$

$$f(x) = 13, \text{ find } x$$

$$y=13 \quad f(x) = 3x - 2$$

$$13 = 3x - 2$$

$$+ 2$$

$$+ 2$$

$$\frac{15}{3} = \frac{3x}{3}$$

$$5 = x$$

Ex 3: $f(x) = -5x + 7$ and $f(x) = -168$,

Find x

$$\begin{array}{r} -168 = -5x + 7 \\ -7 \quad \quad -7 \end{array}$$

$$\begin{array}{r} -175 = -5x \\ -5 \quad \quad -5 \end{array}$$

$$5 = x$$

Ex 4: $f(x) = 3x^2 + 1$ and $f(x) = 49$, Find x

$$\begin{array}{r} 49 = 3x^2 + 1 \\ -1 \quad \quad -1 \end{array}$$

$$\begin{array}{r} 48 = 3x^2 \\ 3 \quad \quad 3 \end{array}$$

$$\sqrt{16} = \sqrt{x^2}$$

$$\boxed{\pm 4 = x}$$