

DETERMINING WHETHER AN EQUATION IS A FUNCTION

Implicit Form

Explicit Form

$$5x + y = 2$$

$$xy = 1$$

$$x^2 + y = 4$$

$$y = -5x + 2$$

$$\underline{y = 1/x}$$

$$\underline{y = 4 - x^2}$$

1) $f(x) = \frac{2}{x^2 - 9}$ {x| All reals except ± 3 }, {x| All reals: $x \neq 3$ and $x \neq -3$ }

{x ∈ Reals: $x \neq 3$ and $x \neq -3$ } $(-\infty, -3) \cup (-3, 3) \cup (3, \infty)$

2) $g(x) = \sqrt{6 + 3x}$ {x| All reals $x \geq -2$ }, $[-2, \infty)$

3) $h(x) = \frac{x}{x^2 - 2x - 3}$ {x| All reals except 3 & -1} $(-\infty, -1) \cup (-1, 3) \cup (3, \infty)$

4) WHAT IS...

a) $f(4) = 2/7$

b) $g(7) = 3\sqrt{3}$

c) $h(1) = -1/4$

d) $g(x + 2)$ $g(x) = \sqrt{12 + 3x}$

GETTING INFORMATION ABOUT THE GRAPH OF A FUNCTION

a) Is the point (2, 1) on the graph? **Yes**

b) What is $f(-2)$? $f(3)$? $f(0)$? **1, 1/2, 5**

c) If $f(x) = 2.5$, what is X? What point(s) is on the graph?

+/-1, (1, 2.5) (-1, 2.5)

d) If $f(x) = 6$, what is x? **Undefined**

2.1 Functions and Problem Solving

1)

a) What is the height of the rock when $t = 0$ seconds? $t = 1$ second?

80 feet. 64 feet.

b) When is the height of the rock 60 feet?

1.12 seconds

c) When does the rock strike the ground?

2.24 seconds

d) Draw a graph of this function using your calculator.

2)

a) $x \cdot (50 - x) = A(x)$

c) $A(x) = -(x^2 - 50x) \Rightarrow A(x) = -(x - 25)^2 + 625$

Vertex(25, 625)

width=25, height=25