

GOOD MORNING!!

Write your homework question on the side board and get started on the questions below.

Determine whether each relation represents a function.
If it is a function, state the domain and range.

$\{(8,3), (4,1), (3,-2), (2,-1)\}$ ✓ $d \rightarrow 8, 4, 3, 2$
 $r \rightarrow 3, 1, -2, -1$

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

$\{(2,3), (4,3), (3,3), (6,-1)\}$ ✓ $d \rightarrow 2, 4, 3, 6$
 $r \rightarrow 3, 3, 3, -1$

$$f(x) = 3x^2 + 2x - 4$$

$$(e) -f(x)$$

$$(H) f(x+h)$$

$$-(3x^2 + 2x - 4)$$

$$-3x^2 - 2x + 4$$

SECTIONS 2-1.2

FUNCTIONS DAY 2!

If you see an asterisk*, then I would recommend you write the information in your notes :)

REVIEW FROM YESTERDAY....

Finding Values of a Function on a Calculator

$$(a) f(x) = x^2 ; f(1.234) \Rightarrow (1.234)^2$$

$$(b) F(x) = \frac{1}{x} ; F(1.234) \Rightarrow \frac{1}{1.234}$$

$$(c) g(x) = \sqrt{x} ; g(1.234) \Rightarrow \sqrt{1.234}$$

IMPLICIT FORM OF A FUNCTION

Implicit Form

$$3x + y = 5$$

$$x^2 - y = 6$$

$$xy = 4$$

Explicit Form

$$y = f(x) = 3x + 5$$

$$y = f(x) = x^2 - 6$$

$$y = f(x) = \frac{4}{x}$$

OBJECTIVE 3

FIND THE DOMAIN OF A FUNCTION DEFINED BY AN EQUATION

Finding the Domain of a Function defined by an equation*

1. Start with the domain as a set of real numbers
2. If the equation has a denominator, exclude any numbers that give a zero denominator
3. If the equation has a radical of even index, exclude any numbers that cause the expression inside the radical to be negative.

Example: Find the domain of each function below.

$$y = x^2$$

$$y = \frac{1}{x}$$

$$y = \sqrt{x}$$

all real #'s

$$y = x^2$$

$$y = \frac{1}{x}$$

$$x \neq 0$$

All real #'s
except 0

$$y = \sqrt{x}$$

$$x \geq 0$$

EXAMPLE.....

Finding the domain of a function

Finding the Domain of each of the following functions

(a) $f(x) = \frac{x+4}{x^2 - 2x - 3}$

(b) $g(x) = x^2 - 9$

All real #'s

(c) $h(x) = \sqrt{6-2x}$

$$\begin{array}{l} x^2 - 2x - 3 \neq 0 \\ (x+1)(x-3) \neq 0 \\ \begin{array}{c|c} x+1 \neq 0 & x+3 \neq 0 \\ \hline -1 & +3 \\ \hline x \neq -1 & x \neq 3 \end{array} \\ \text{All real #'s except } -1, 3. \end{array}$$

$$h(x) = \sqrt{6-2x}$$

ADP

$$\begin{array}{r} \cancel{6} - 2x \geq 0 \\ \hline \cancel{-2x} \geq \cancel{-6} \\ \hline \cancel{-2} \quad \quad \quad \cancel{-2} \end{array}$$

$$x \leq 3$$

TRY ON YOUR OWN....

Finding the domain of a function

Finding the Domain of each of the following functions

(a) $f(x) = \frac{3x}{x^2 - 4}$

$$\Rightarrow x^2 - 4 \neq 0$$

$$(x+2)(x-2) \neq 0$$

$$x+2=0 \quad x-2 \neq 0$$

$$x \neq -2 \quad x \neq 2$$

(c) $h(x) = \sqrt{4 - 3t}$

$$\begin{array}{r} \cancel{-4} - 3t \geq 0 \\ \cancel{-4} \qquad \qquad \qquad -4 \end{array}$$

$$\begin{array}{r} -3t \geq -4 \\ \hline -3 \qquad \qquad -3 \end{array}$$

$$t \leq \frac{4}{3}$$

DAY 2 ASSIGNMENT

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#2, 3, 5, 9, 10, 15, 16, 19, 20, 21, 27, 29, 33, 40,

