WARM-UP...

Given $f(x)=3x-5$ & $g(x)=2x^2-3x+1$ determine each of the following...

1) $f(4)$ = 7

2) $f(0)$ = -5

3) $f\left(\frac{2}{3}\right)$ = -3

4) $g(-3)$ = -8

5) $g(3.5)$ = 15

6) $g(f(-1))$

7) *Find x when* $f(x)=1$

8) *Find x when* $f(x)=7$

$f(-1)=-8$

$g(-8)=153$

$3x-5=f(x)$

$3x-5=1$ (+5 +5)

$\frac{3x}{3}=\frac{6}{3}$

$x=2$

$3x-5=7$ (+5 +5)

$3x=12$

$x=4$

EXERCISE...

1) Given $f(x)=x^2+2x-1$, find $f(2)$.

2) Given $f(x)=x^2+2x-1$, find $f(-3)$.

① $f(2)=2^2+2(2)+1$

$=4+4+1$

$=9$

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

$=9-6-1$

$=2$

3) Given: $f(x)=-2+7x$ and $w(x)=x^2-7x+3$

Find: (a) $f(w(-1))$

(b) $w[f(w(0))]$

$w(x)=x^2-7x+3$

$w(0)=0^2-7(0)+3$

$=3$

$f(3)=-2+7(3)$

$=-2+21$

$=19$

$w(19)=(19)^2-7(19)+3$

$=361-133+3$

$=231$

Let's bring in some algebra...

- Given that $f(x) = 3x^2 + 2x$, find $f(h)$.
- Given that $f(x) = 3x^2 + 2x$, find $f(x + h)$.

$f(h) = 3h^2 + 2h$ * $f(x+h) = 3(x+h)^2 + 2(x+h)$ *

$= 3(x^2 + 2xh + h^2) + 2x + 2h$

$= 3x^2 + 6xh + 3h^2 + 2x + 2h$

$(x+h)(x+h)$

$x^2 + xh + xh + h^2$

$x^2 + 2xh + h^2$

Practice Problems...

Worksheet - Function Notation.pdf

Quiz tomorrow...

SOLUTIONS...

Evaluate at the given number.

1) $f(x) = 3x - 8$
a. $f(1) = -5$
b. $f(-3) = -17$
c. $f(5) = 7$
d. $f(-6) = -26$
e. $f(0) = -8$

2) $f(x) = 2 - 4x$
a. $f(-5) = 22$
b. $f(-2) = 10$
c. $f(0) = 2$
d. $f(4) = -14$
e. $f(6) = -22$

5) $h(x) = 3x^2 + 7$
a. $h(-4) = 55$
b. $h(-2) = 19$
c. $h(0) = 7$
d. $h(3) = 34$
e. $h(5) = 82$

6) $h(x) = 5 - x^2$
a. $h(-4) = -11$
b. $h(-1) = 4$
c. $h(3) = -4$
d. $h(5) = -20$
e. $h(-7) = -44$

9) $h(x) = -x^2 + 6x - 4$
a. $h(-3) = -31$
b. $h(-1) = -11$
c. $h(0) = -4$
d. $h(3) = 5$
e. $h(6) = -4$

10) $h(x) = 7x - x^2 + 2$
a. $h(-4) = -20$
b. $h(-1) = 16$
c. $h(1) = 30$
d. $h(4) = 36$
e. $h(8) = 16$

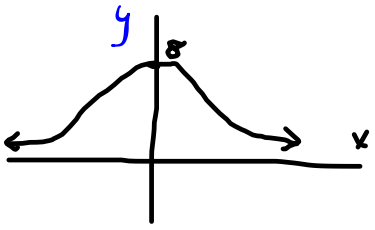
Number Relations and Functions 10

1. Evaluate the following expressions given the functions below:

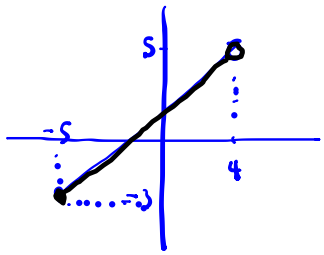
$g(x) = -3x + 1$ $f(x) = x^2 + 7$ $h(x) = \frac{12}{x}$ $j(x) = 2x + 9$

a. $g(10) = 29$
b. $f(3) = 16$
c. $h(-2) = -6$
d. $j(7) = 23$
e. $h(0) =$ undefined
f. $g(4) = -11$
g. $f(h(3)) = 23$
h. Find x if $g(x) = 16$ $x = -5$
i. Find x if $h(x) = -2$ $x = -6$
j. Find x if $f(x) = 23$ $x = \pm 4$

Function / Nonfunction?
Domain?
Range?



Function
Domain: $\{x \in R\}$
Range: $\{y \leq 8, y \in R\}$



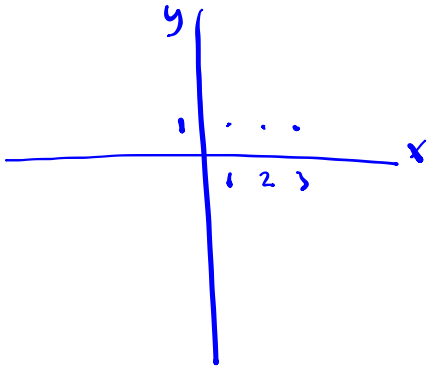
Function
Domain: $\{-5 \leq x < 4, x \in R\}$
Range: $\{-3 \leq y < 5, y \in R\}$

Sport	equipment
bball	ball
hockey	stick
hockey	puck

Nonfunction

Domain: {bball, hockey}

Range: {ball, puck, stick}



Function

Domain: {1,2,3}

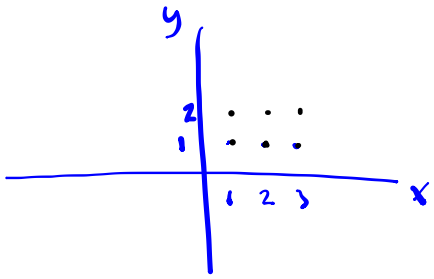
Range: {1}

(2,3) (3,4) (5,10) (2,7)

Nonfunction

Domain: {2,3,5}

Range: {3,4,7,10}



Nonfunction

Domain: {1,2,3}

Range: {1,2}

Attachments

Worksheet - Function Notation.pdf