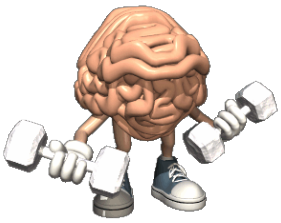
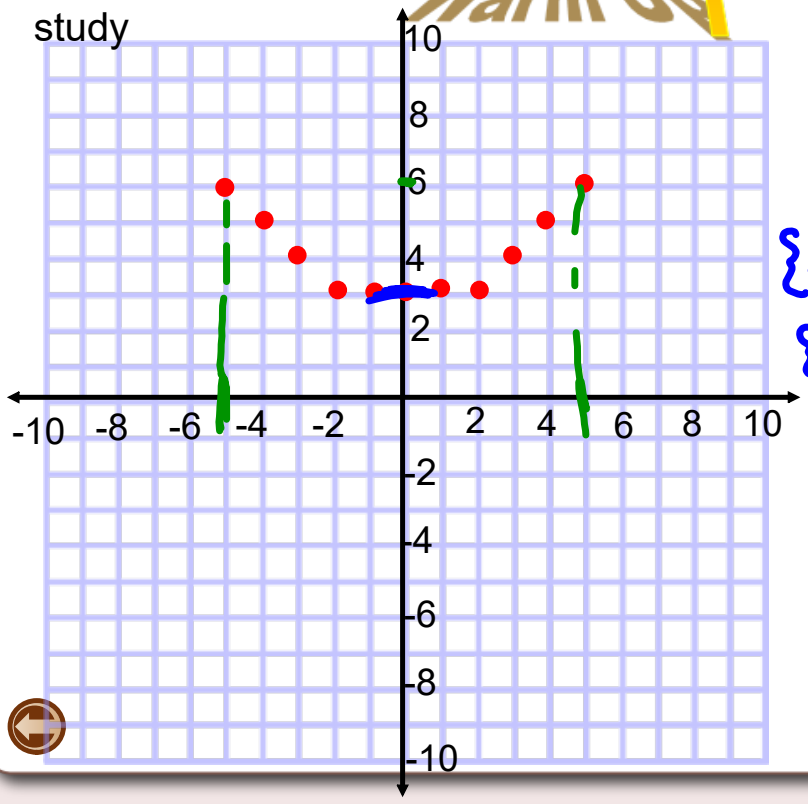
QUIZ Wednesday after the long weekend. So time to study

Warm Up





Domain & Range

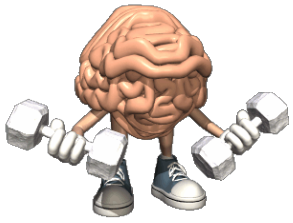
$\{x \mid -5 \le x \le +5, x \in I\}$

$\{y \mid 3 \le y \le 6, y \in I\}$

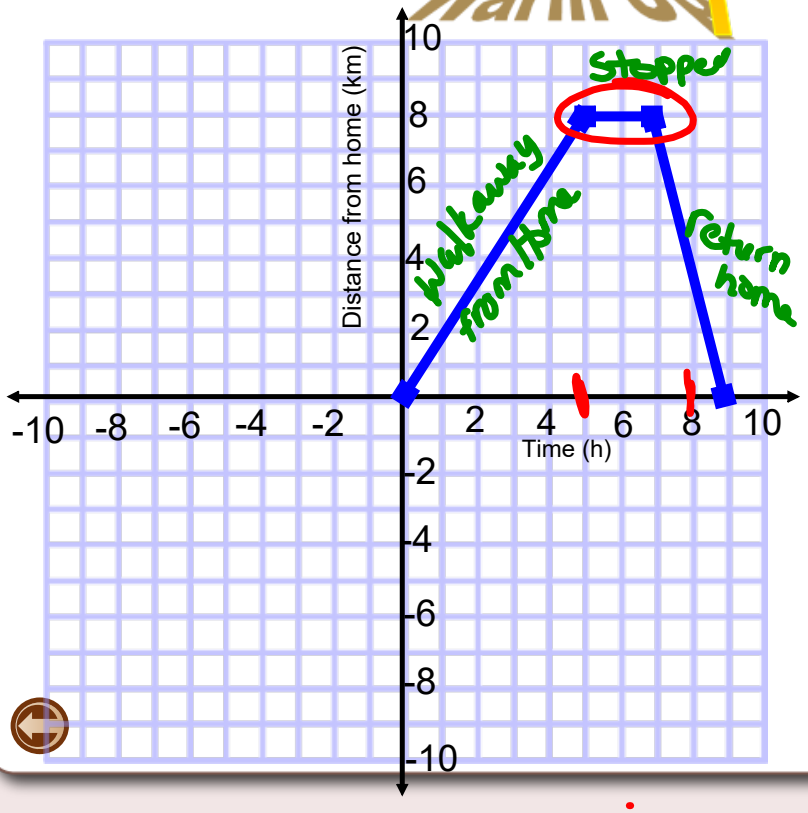
Function

Discret

Warm Up



Domain & Range



What is between t=5 and t=8?

HW Solutions

Any questions from Page 294-296

#10,11,12,13,17,19,20b,21b,22

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Solving Equations

Simplify and then solve for x:

Example 1:

$15 + x + 16x = 100$

$15 + 17x = 100$

$-15 \quad -15$

$15 + 17x = 100 - 15$

$\frac{17x}{17} = \frac{85}{17}$

$x = 5$

Example 2:

$-25 = 12x + 10 - 4x$

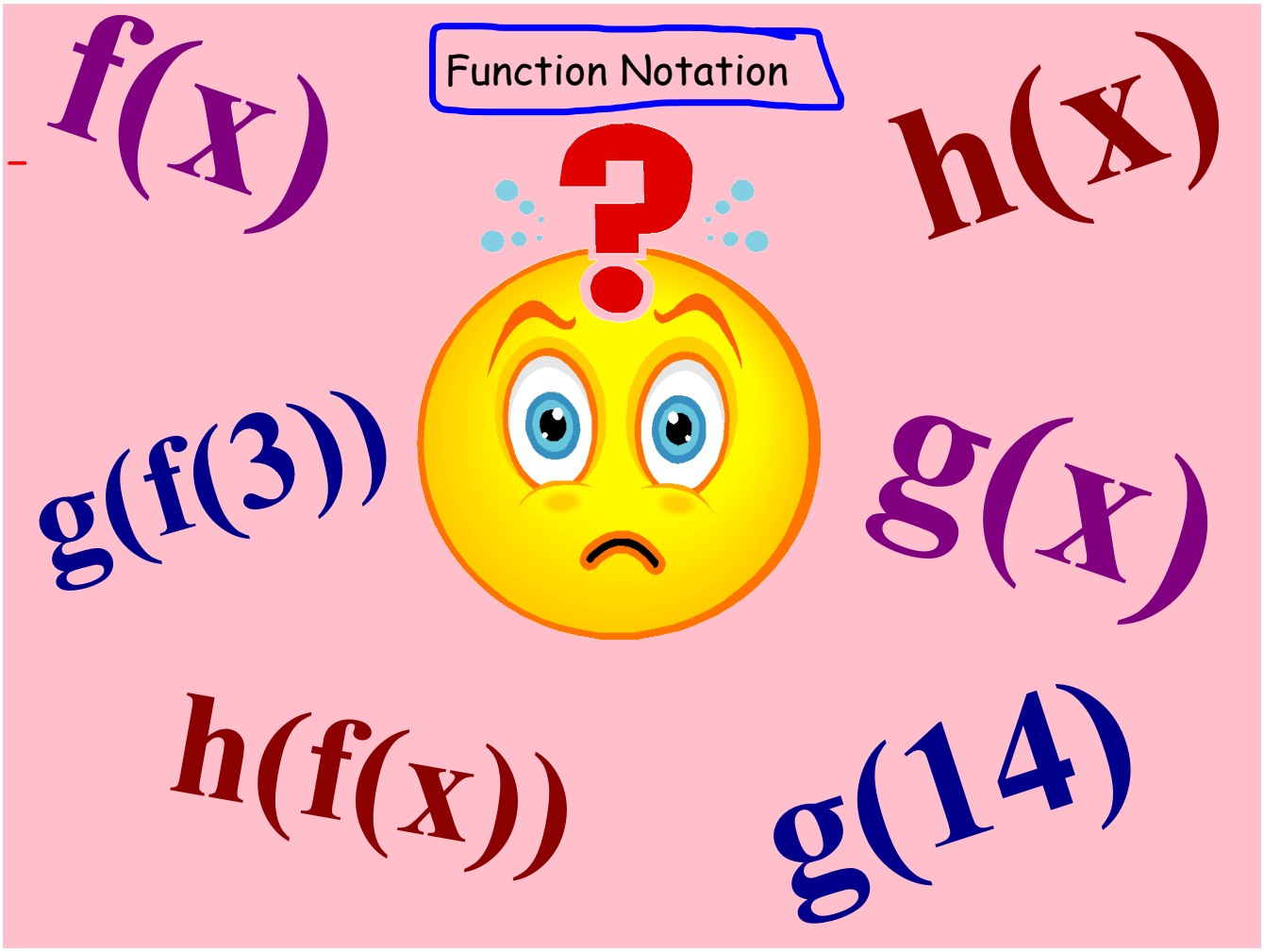
$-25 = 8x + 10$

$-10 \quad -10$

$-25 = 8x + 10 - 10$

$\frac{-35}{8} = \frac{8x}{8}$

$\frac{-35}{8} = x$


Function Notation
f(x)
h(x)
g(f(3))
g(x)
h(f(x))
g(14)

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Equations

Often in working with a formula we may need to substitute more than one value for the variable.

Example

The cost, c, in cents for making pencils is given by the formula

Function Notation
C(n) = 5 + 2n

$$C = 5 + 2n$$

C Cost in cents
Dependent

n number of pencils made
Independent

The cost depends on the number of pencils you buy

copy down **Function**

A function is just an expression evaluated at a specific value

The cost, c, in cents for making pencils is given by the formula

$$C(n) = 5 + 2n$$

C(n) Cost in cents of "n" penciles

n number of pencils made

The cost depends on the number of pencils you buy

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Try This!!

Independent x

dependent y

Number of Marbles, n	Mass of Marbles, m (g)
0	0
1	1.27
2	2.54
3	3.81
4	5.08
5	6.35
6	7.62

+1.27 +1.27 1.27 1.27 1.27 1.27

Linear

$m = 1.27n$ Equ

$m(n) = 1.27n$ function notation

a) ~~State the domain & Range.~~ Did before

b) Is this relation a function? No "n" repeated so function

c) State the dependent and independent variables.

d) Write the function notation. (hint: write an equation first)

1.27

copy down

Hours Worked, h	Gross Pay, P ($)
0	0
1	12
2	24
3	36
4	48
5	60

+12 +12 +12 +12

$P = 12h$

$P(h) = 12h$

Let's write the function notation

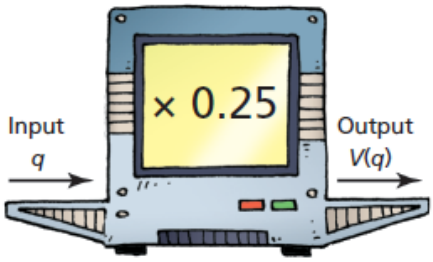
$$P(h) = 12h$$

What is the person's pay after 20 hours?

$$P(20) = 12(20)$$
$$P(20) = \$240$$

We can think of functions as input/output machines.

- Machine A



Function V

Input can be number in domain (Independent Variable)

Output can be number in range (Dependent Variable)

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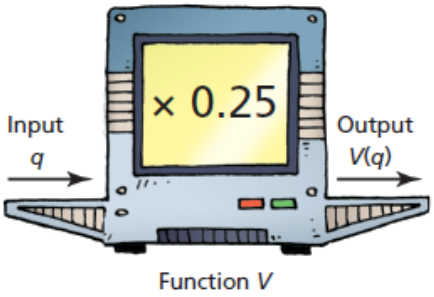
- Machine A



Function V

When the input is q quarters, the output or value, V, in dollars is: ?

$V(q) = 0.25q$

?

?

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Try this on your own!!!!!!!!!!!!!!!

Example

** On test

Equation

The equation V= -0.08d + 50 represents the volume, V liters, of gas remaining in a vehicle's tank after travelling d kilometers. The tank is not filled until it is empty.

a) Describe the function.
Write the equation in function notation.

$V(d) = -0.08d + 50$

b) Determine the value of $V(600)$.
What does this number represent?

$V(600) = -0.08(600) + 50$
$= -48 + 50$
$V(600) = 2$

2 L of gas remains in tank after driving 600 km.

c) Determine the value of d when $V(d) = 26$.
What does this number represent?

$V(d) = -0.08d + 50$

$26 = -0.08d + 50$

Rearrange and solve for "d"

In order to have 26 L left in tank I would have to drive 300 km

$26 - 50 = -0.08d + 50 - 50$

$-24 = -0.08d$

$\frac{-24}{-0.08} = \frac{-0.08d}{-0.08}$

$300 = d$

Try This!!!

copy down

3. The equation $C = 25n + 1000$ represents the cost, C dollars, for a feast following an Arctic sports competition, where n is the number of people attending.

   a) Describe the function.
   Write the equation in function notation.

   b) Determine the value of $C(100)$.
   What does this number represent?

   c) Determine the value of n when $C(n) = 5000$.
   What does this number represent?

solutions

3. The equation $C = 25n + 1000$ represents the cost, C dollars, for a feast following an Arctic sports competition, where n is the number of people attending.

a) Describe the function.

Write the equation in function notation.

solutions

b) Determine the value of $C(100)$. What does this number represent?

solutions

c) Determine the value of n when $C(n) = 5000$. What does this number represent?

copy down

Function Notation

Recap

- To represent functions, we use symbols like f(x) and g(x).
- The symbol f(x) is read "f of x" and simply means that the expression that follows involves x.

Complete for Homework

Evaluating Functions

Show all work

1) *If* $f(x) = 3x^2 - x - 6$, *find*...

a) $f(5)$

b) f(-7)

c) f(-3)

2) If g(x) = x + 3 and h(x) = -3x-2

a) g(5) b) g(7) c) h(-10) d) h(5)

e) g(h(4)) f) g(x) = 33 g) h(x)= -41