0.1 Solving Puzzles in Teams

function notation

"f of x"

$f(x) = 3x + 5$

input

If I use 4 as the input, what is the output?

$f(4) = 3(4) + 5$

$f(4) = 17$

composition of functions

We used a composition of functions to determine the order of using our functions to input 6 in the first function in order to get an output of 11 in the last function.

$f(h(k(g(6))))$

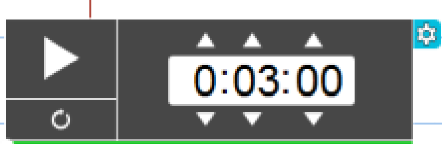
where we plugged in 6 to the g(x) function, took that output and used is as an input with k(x). Found that ouput and then used it as an input with h(x), etc.

key points/ questions

classwork

Summary

What was your team role today and how did it contribute to your team's work/success?



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do your HW on p.14 in your INB

HW: do Problems 1-4
and read Math Notes about functions - record any definitions in Vocab section

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METHODS AND MEANINGS

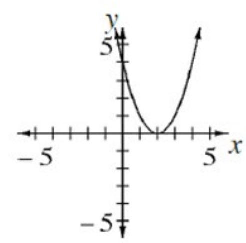
MATH NOTES

Functions

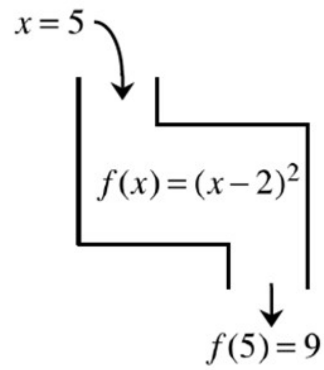
A relationship between inputs and outputs is a **function** if there is no more than one output for each input. Functions are often written as $y =$ some expression involving x, where x is the input and y is the output. The following is an example of a function.

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

x	–2	–1	0	1	2	3	4	5
y	16	9	4	1	0	1	4	9



In the example above the value of y depends on x, so y is also called the **dependent variable** and x is called the **independent variable**.



Another way to write a function is with the notation "$f(x) =$" instead of "$y =$". The function named "f" has output $f(x)$. The input is x.

In the example at right, $f(5) = 9$. The input is 5 and the output is 9. You read this as, "f of 5 equals 9."

The set of all inputs for which there is an output is called the **domain**. The set of all possible outputs is called the **range**. In the example above, notice that you can input any x-value into the equation and get an output. The domain of this function is "all real numbers" because any number can be an input. The outputs are all greater than or equal to zero, so the range is $y \geq 0$.

$x^2 + y^2 = 1$ is not a function because there are two y-values (outputs) for some x-values, as shown below.

$$x^2 + y^2 = 1$$

x	–1	0	0	1
y	0	–1	1	0