

Algebra II
Composition of Functions
Day 2

12. $g(x) = x - 3$ $h(x) = x^2 + 1$
 $(g \circ h)(-6) = g(h(-6))$ $h(-6) = (-6)^2 + 1 = 37$
 $g(37) = 37 - 3 = 34$

Nov 24-2:16 PM

Dec 8-9:29 AM

$f(x) = 2x - 1$ and $g(x) = 4x + 1$
 Find $f(g(x))$

$4x + 1$

$2(4x + 1) - 1$

$8x + 2 - 1$
 $8x + 1$

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Example:
 If $f(x) = 3x^2$ and $g(x) = 3x + 5$, write an expression that is equivalent to $f(g(x))$.

Plug the inside function into the outside function!

$f(3x+5) = 3(3x+5)^2$

$(3x+5)(3x+5)$

$9x^2 + 15x + 15x + 25$

$3(9x^2 + 30x + 25) = 27x^2 + 90x + 75$

Write an expression that represents $g(f(x))$.

$g(3x^2) = 3(3x^2) + 5$

$9x^2 + 5$

Jan 2-10:04 AM

Example 6:

If $f(x) = 2x - 3$ and $g(x) = 3x + 5$, write an expression that is equivalent to $(f \circ g)(x)$.

$$\begin{aligned} f(g(x)) &= 2(3x+5) - 3 \\ &= 6x + 10 - 3 = \boxed{6x + 7} \end{aligned}$$

Note:
 $\circ \neq \cdot$
 $(f \circ g)(x) \neq (f \cdot g)(x)$

Now, write an expression that is equivalent to $(g \circ f)(x)$.

$$\begin{aligned} g(f(x)) &= 3(2x-3) + 5 \\ &= 6x - 9 + 5 = \boxed{6x - 4} \end{aligned}$$

Conclusion

1. How do you find the composition of two functions? *Put one in the other*
2. Do we get a number as an answer or an equation? *No*
3. Questions?

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Dec 11-8:09 AM

Assignment**Composition of Functions
Worksheet Day 2**

Dec 2-9:11 AM