

MA 109: August 30

Composition of Functions

Start of Class

Instructor Information

Name:

Email:

Office Hours:

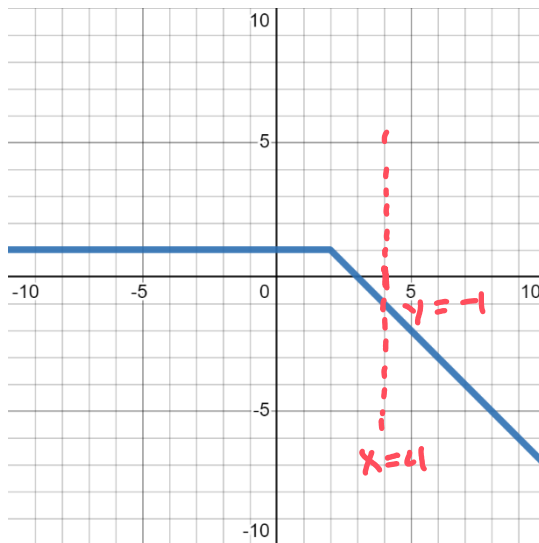
Warm-up Questions

Notes

Example: Suppose $f(x) = x^2 - 7$ and $g(x)$ is given in the graph below. What is $f(g(4))$?

$g(4)$ is the
input for
 f

Strategy: evaluate the inside ($g(4)$), then plug that into the outside (f)



Step 1: $g(4)$: use graph

$$g(4) = -1$$

Step 2: plug -1 into f :

$$f(-1) = (-1)^2 - 7$$

$$= 1 - 7$$

$$= \boxed{-6}$$

answer

Example: Suppose $f(x) = x^2 + 7$ and $g(x) = 3 - x$. What is $f(g(x))$?



no number to input to f , so we plug in the entire formula

Strategy: plug the formula for the inside ($g(x)$) into the outside (f)

$$f(g(x)) = f(3-x) = \boxed{(3-x)^2 + 7}$$

answer

Note: do not simplify unless told to do so

End of Class

Write a summary of what you learned today:

What questions do you have about the material from today?

What do you need to do between now and the next class meeting?