Functions assign specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to specific \_\_\_\_\_\_\_\_\_\_. We can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ functions by substituting the given value into the function and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Example: Given the functions below, evaluate each value.**

**f(x) =** 2x - 1 **g(x) =** \_\_\_\_\_\_\_\_\_\_ **h(x)** = \_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| a.)g(4)  | b.) f(- 1) | c.) (f + h)(2) |

**What if we put a function \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ another function?**

Then we are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ functions!

**We can show functions are being composed in two different way:**

Open circle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

One function inside another: \_\_\_\_\_\_\_\_\_\_\_\_\_

**What does it mean to compose two functions?**

To compose two functions means to make the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How to compose functions?**

Always start with the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**What does each part of the composition tell us?**

**\_\_(\_\_(\_\_))**

**Examples:**

**f(x) =  g(x) =  h(x) = **

A.) f(g(x))

B.) h(f(x))

C.) g(h(x))

**What do you notice about your answers when you use a function within a function?” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

D.) f(h(3))

**What do you notice about your answer when you use a number? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**