

# Day 00 Unit 5 HW

A.  $f(x) = \frac{3}{4}x - 3$   $g(x) = |x|$

1.  $f(g(-4)) \Rightarrow g(-4) = |-4| = 4$

$f(4) = \frac{3}{4}(4) - 3 = 3 - 3 = \textcircled{0}$

2.  $g(f(-4)) \Rightarrow f(-4) = \frac{3}{4}(-4) - 3 = -3 - 3 = -6$

$g(-6) = |-6| = \textcircled{6}$

3.  $f(g(2)) \Rightarrow g(2) = |2| = 2$

$f(2) = \frac{3}{4}(2) - 3 = \frac{3}{2} - \frac{6}{2} = \textcircled{-\frac{3}{2}}$

4.  $g(f(2)) \Rightarrow f(2) = -\frac{3}{2}$  (see above)  $g(-\frac{3}{2}) = |-\frac{3}{2}| = \textcircled{\frac{3}{2}}$

5.  $f(g(-2)) \Rightarrow g(-2) = |-2| = 2$   $f(2) = \textcircled{-\frac{3}{2}}$

6.  $g(f(-2)) \Rightarrow f(-2) = \frac{3}{4}(-2) - 3 = -\frac{3}{2} - \frac{6}{2} = -\frac{9}{2}$

$g(-\frac{9}{2}) = |-\frac{9}{2}| = \textcircled{\frac{9}{2}}$

B.  $f(x) = -2x^2 + 3$   $g(x) = \sqrt{x+3} + 4$

7.  $f(g(1)) \Rightarrow g(1) = \sqrt{4} + 4 = 2 + 4 = 6$

$f(6) = -2(6)^2 + 3 = -2(36) + 3 = -72 + 3 = \textcircled{-69}$

8.  $g(f(1)) \Rightarrow f(1) = -2(1)^2 + 3 = -2 + 3 = 1$

$g(1) = \textcircled{6}$

9.  $f(g(-2)) \Rightarrow g(-2) = \sqrt{-2+3} + 4 = 1 + 4 = 5$

$f(5) = -2(5)^2 + 3 = -2(25) + 3 = -50 + 3 = \textcircled{-47}$

10.  $g(f(-2)) \Rightarrow f(-2) = -2(-2)^2 + 3 = -2(4) + 3 = -8 + 3 = -5$

$g(-5) = \sqrt{-5+3} + 4 = \textcircled{\emptyset}$

11.  $f(g(-4)) \Rightarrow g(-4) = \sqrt{-4+3} + 4 = \emptyset \therefore f(\emptyset) = \textcircled{\emptyset}$

12.  $g(f(-4)) \Rightarrow f(-4) = -2(-4)^2 + 3 = -2(16) + 3 = -32 + 3 = -29$

$g(-29) = \sqrt{-29+3} + 4 = \textcircled{\emptyset}$

C.  $f(x) = 2x - 5$   $g(x) = \frac{1}{2}(x + 5)$

13.  $f(g(-4)) \Rightarrow g(-4) = \frac{1}{2}(-4 + 5) = \frac{1}{2}$

$f\left(\frac{1}{2}\right) = 2\left(\frac{1}{2}\right) - 5 = 1 - 5 = \textcircled{-4}$

14.  $g(f(-4)) \Rightarrow f(-4) = 2(-4) - 5 = -8 - 5 = -13$

$g(-13) = \frac{1}{2}(-13 + 5) = \frac{1}{2}(-8) = \textcircled{-4}$

15.  $f(g(3)) \Rightarrow g(3) = \frac{1}{2}(3 + 5) = \frac{1}{2}(8) = 4$

$f(4) = 2(4) - 5 = 8 - 5 = \textcircled{3}$

16.  $g(f(3)) \Rightarrow f(3) = 2(3) - 5 = 6 - 5 = 1$

$g(1) = \frac{1}{2}(1 + 5) = \frac{1}{2}(6) = \textcircled{3}$

$f = \{(-2, -3), (-4, 0), (4, -3), (2, -3)\}$   $g = \{(3, -2), (2, -4), (-3, 4), (0, -1)\}$

17.  $g(f(2)) \Rightarrow f(2) = -3$

$g(-3) = \textcircled{4}$

18.  $f(g(3)) \Rightarrow g(3) = -2$

$f(-2) = \textcircled{-3}$

19.  $f(g(-3)) \Rightarrow g(-3) = 4$

$f(4) = \textcircled{-3}$

Composition of functions is...

We'll talk about this & the  
back examples next block! 😊