

Name _____
Date _____

Advanced Algebra
Unit 2: Families of Functions
Homework #8

1. Given $f(x) = 3x+2$ and $g(x) = 4x-6$

Find the following:

a. $f(g(3))$ _____

b. $f(g(-2))$ _____

c. $g(f(4))$ _____

d. $g(f(-3))$ _____

e. $f(g(x))$ _____

f. $g(f(x))$ _____

2. **Given $y=x^3$**

a. For what x values is f(x) increasing?

b. For what x values if f(x) decreasing?

3. **Given $f(x) = 2x-2$ and $g(x) = x^2$**

Find the following:

a. $f(g(x))$

b. $g(f(x))$

I can find x and y intercepts:

Find the x and y intercepts for the following functions. You should be able to tell by looking at the function if it DOES NOT have x intercepts.

1) $f(x)=2(x-8)^2 + 25$

2) $f(x) = \frac{1}{4}x+22$

x intercept

y intercept

x intercept

Y intercept

3) $f(x) = 3(x+5)^2 - 4$

4) $f(x) = -(x-2)^3+18$

x intercept

y intercept

X intercept

y intercept

5) $f(x) = (x - 3)^{\frac{1}{3}}+18$

6) $f(x)=2(x-8)^2 - 105$

X intercept

y intercept

x intercept

y intercept

7) $y = 3|x - 6|-18$

8) $f(x) = 2(x - 4)^{\frac{1}{3}}$