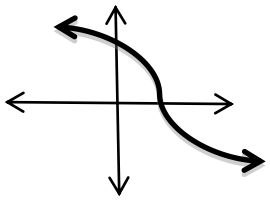
Algebra II Name _____

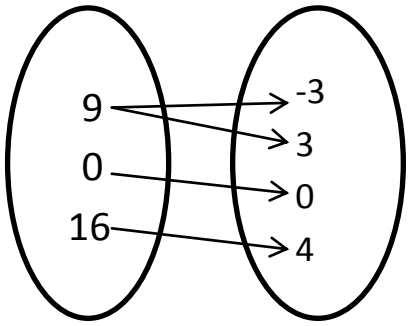
Functions #4

State the domain and range of the following. Specify whether it is a function or not.

1.



2.



Using $f(x) = 3|x - 4|$ and $g(x) = -2x^2 - 4x + 2$ evaluate the following.

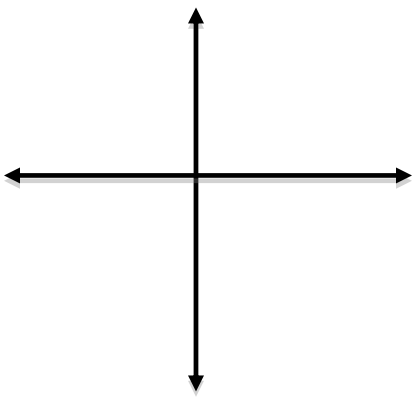
3. f(-2) 4. g(-3) 5. f(6) 6. g(2)

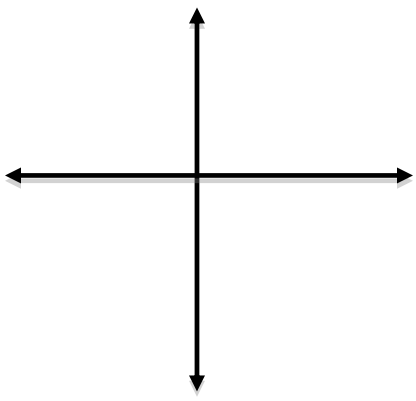
For each of the following, state the parent function, transformations, domain, and range. Make a sketch.

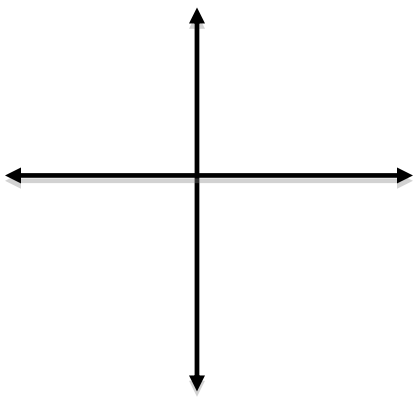
7. $g(x) = x^2 - 6$
PF: _____
D: _____
R: _____
Transformations

8. $g(x) = 2|x - 1|$
PF: _____
D: _____
R: _____
Transformations

9. $f(x) = -\sqrt{x} - 2$
PF: _____
D: _____
R: _____
Transformations







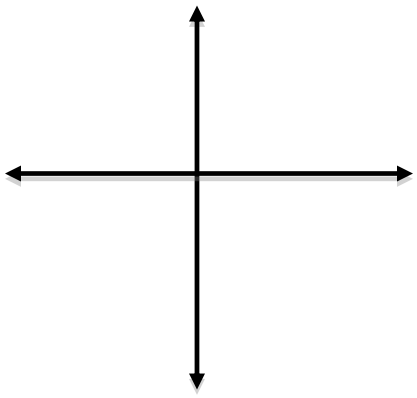
10. $g(x) = \frac{1}{2}(x + 1)^2 + 3$

PF: _____

D: _____

R: _____

Transformations



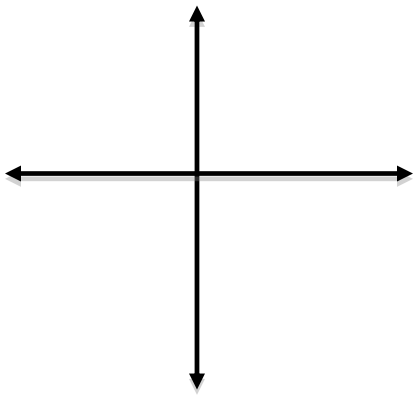
11. $f(x) = - |x + 5| - 2$

PF: _____

D: _____

R: _____

Transformations



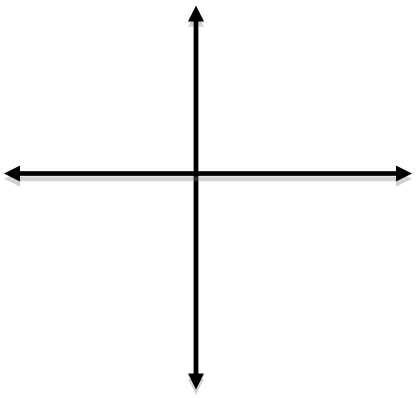
12. $h(x) = x^3 - 2$

PF: _____

D: _____

R: _____

Transformations



Given the parent function and a description of the transformation, write the equation of the transformed function.

13. Absolute value – shift down 5 and right 3. _____

14. Exponential – shift up 5. _____

15. Square Root – reflect over the x-axis, shift down 2, left 7. _____

16. Quadratics – wider, shift left 8, shift down 3. _____

17. Given $f(x) = 2x^2 + 3$, write an equation whose graph shifted to the right 2 units and shifted down 7 units.

18. Given $y = |x - 4| - 1$, write an equation whose graph is reflected over the x-axis and is less steep (wider).

19. Given $f(x) = x^3 - 5$, write an equation whose graph is more steep, shifted 3 units to the left and reflected over the x-axis.

20. List the 8 parent functions that we are studying, with their domains and ranges and locations of asymptotes.