Homework 2.2: Parent Functions & Transformations

Name: _____

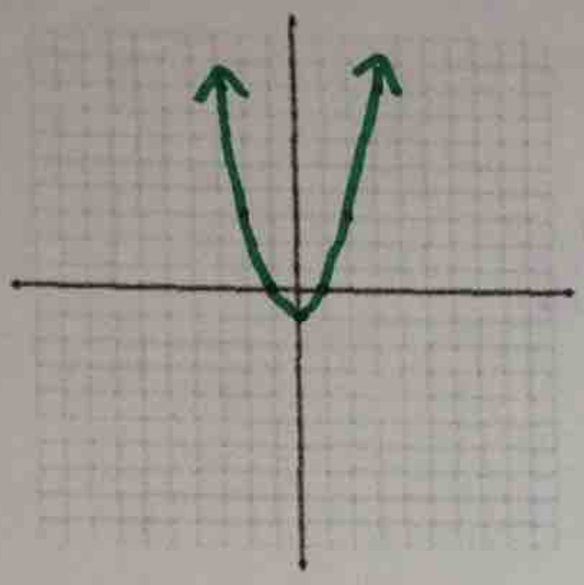
Math 3

Directions: Give the name of the parent function and describe the transformation represented.

1. $g(x) = x^2 - 1$

Parent: quadratic

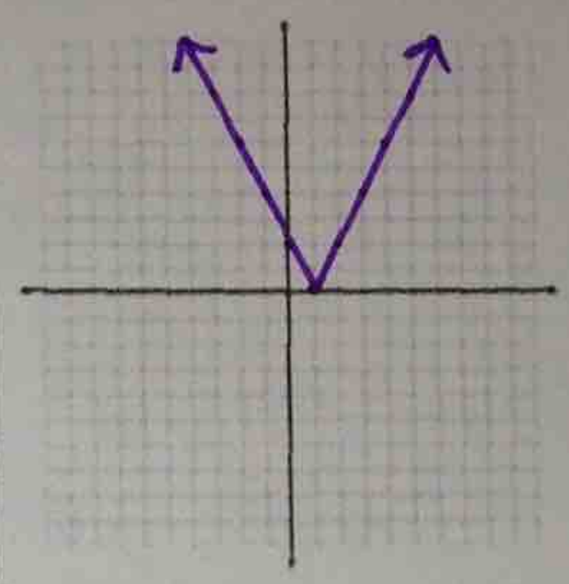
Transformations: Down 1



2. $f(x) = 2|x-1|$

Parent: Absolute value

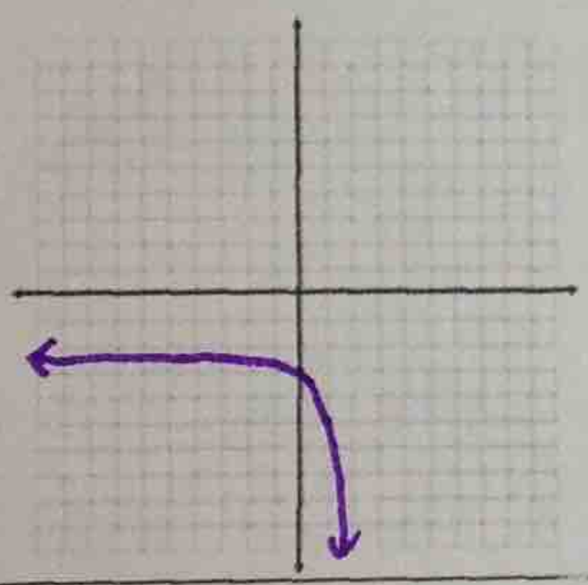
Transformations: Stretch of 2, R1



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

Parent: exponential

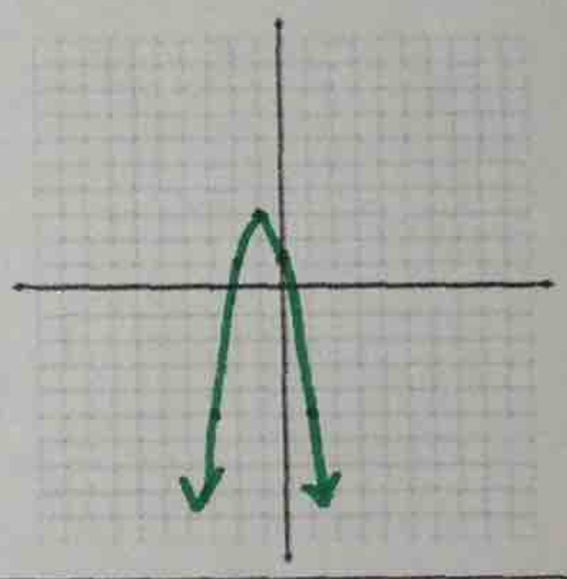
Transformations: reflection over X, D2



4. $g(x) = -2(x+1)^2 + 3$

Parent: quadratic

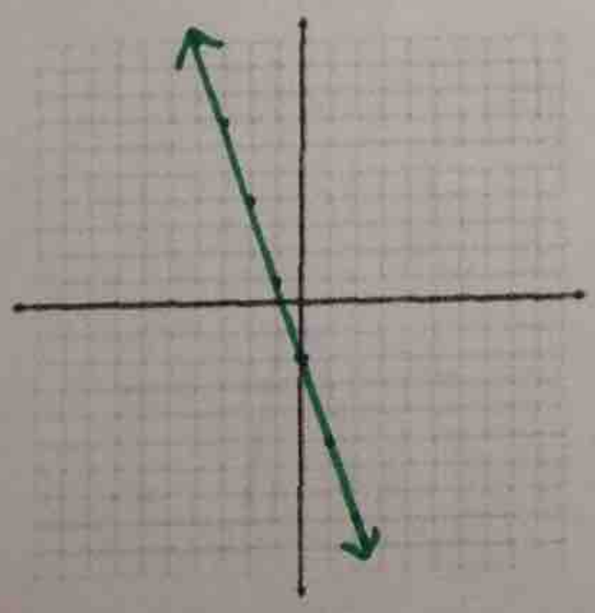
Transformations: stretch by 2, L1, U3 reflection over X



5. $g(x) = -3x - 2$

Parent: Linear

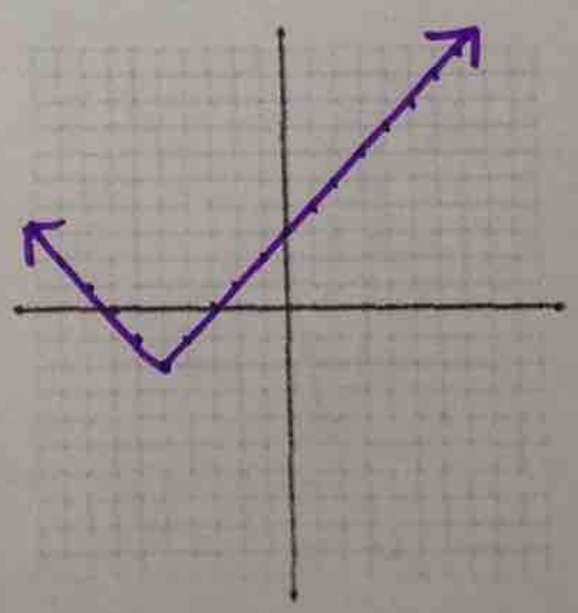
Transformations: reflection over X, stretch by 3, R2, D2



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

Parent: Absolute value

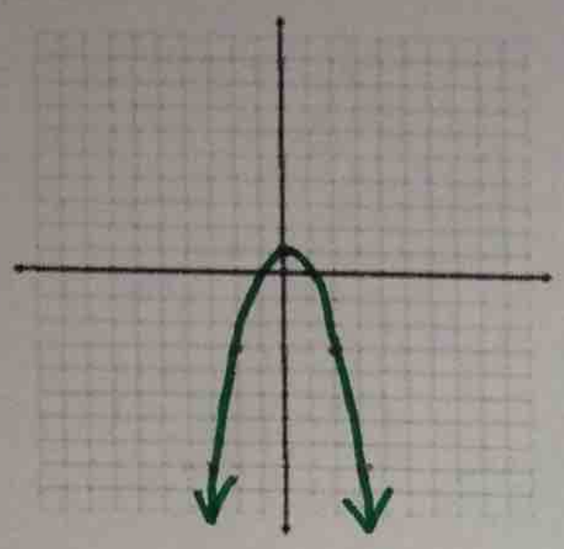
Transformations: L5, D2



7. $h(x) = -x^2 + 1$

Parent: quadratic

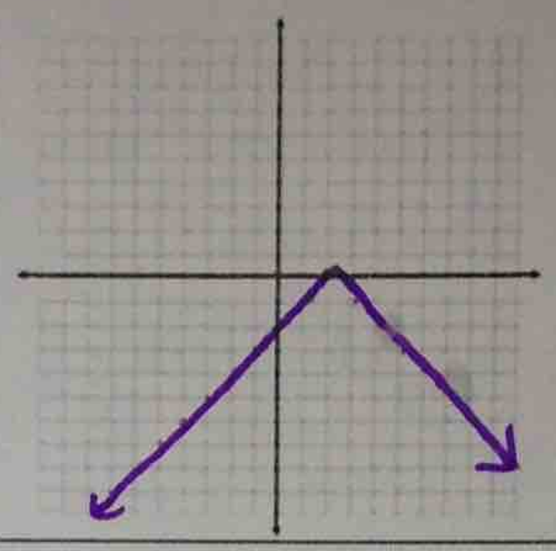
Transformations: reflection over x, U1



8. $h(x) = -|x - 2|$

Parent: Absolute value

Transformations: reflection over x, R2



Directions: Given the parent function and a description of the transformation, write the equation of the transformed function, f(x).

11. Absolute Value — vertical shift up 5, horizontal shift right 3. $f(x) = |x - 3| + 5$

12. Linear — vertical stretch/compression by $\frac{2}{5}$ $f(x) = \frac{2}{5}x$

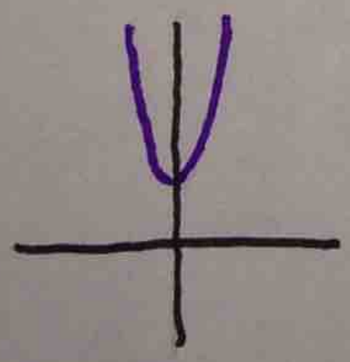
13. Logarithmic — flipped over the x axis, vertical shift down 2 $f(x) = -\log x - 2$

14. Exponential — vertical stretch by 8 $f(x) = 8(2)^x$

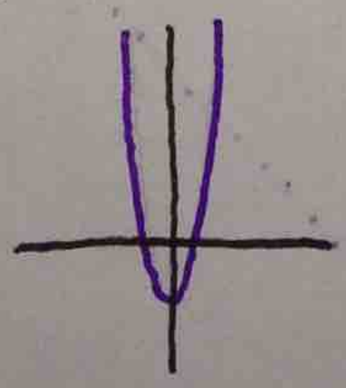
15. Quadratic — vertical stretch by 5, horizontal shift left 8. $f(x) = 5(x + 8)^2$

16. Which graph best represents the function $f(x) = 2x^2 - 2$?

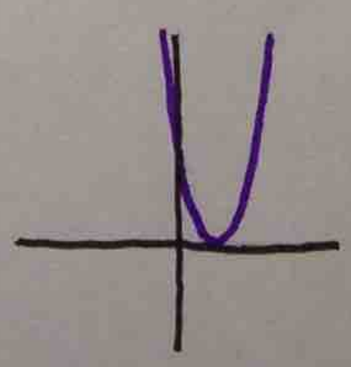
a.



b.



c.



d.