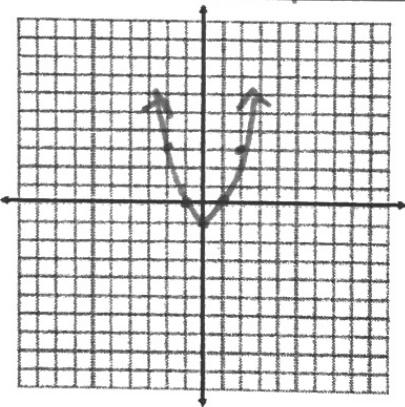


4.4 Transformations

Identify the parent function and describe the transformation. Then sketch the function.

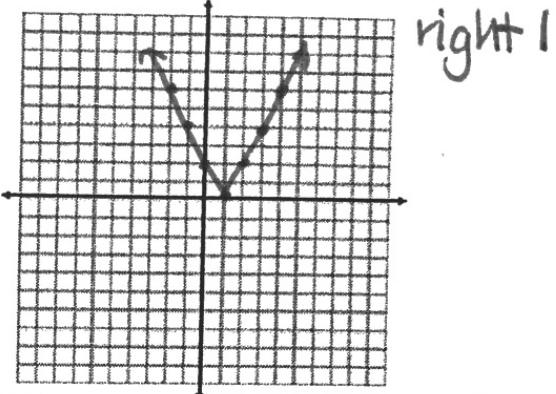
1. $g(x) = x^2 - 1$ Parent: $y = x^2$

Transformations: down 1



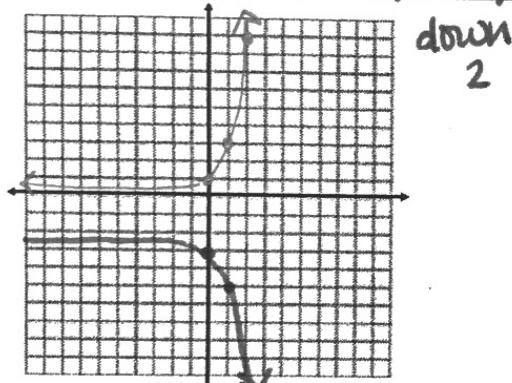
2. $f(x) = 2|x-1|$ Parent: $y = |x|$

Transformations: vert. stretch of 2 right 1



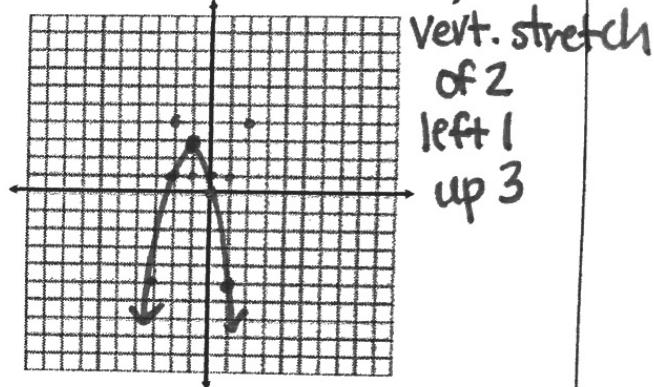
3. $h(x) = -3^x - 2$ Parent: $y = 3^x$

Transformations: reflection in x-axis, down 2



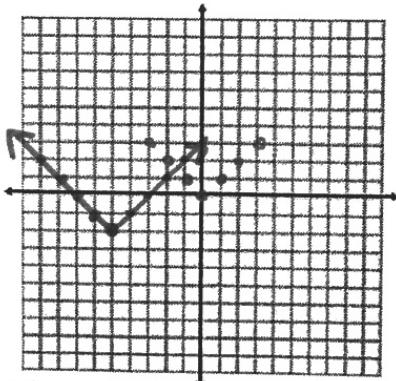
4. $g(x) = -2(x+1)^2 + 3$ Parent: $y = x^2$

Transformations: ref. in x-axis, vert. stretch of 2 left 1 up 3



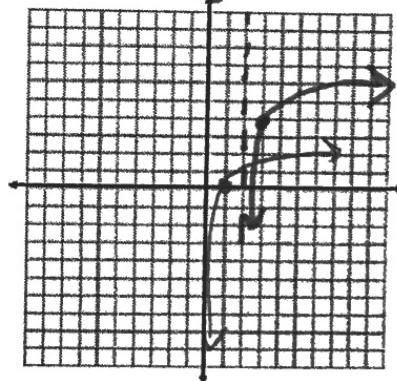
5. $f(x) = |x+5| - 2$ Parent: $y = |x|$

Transformations: left 5 down 2



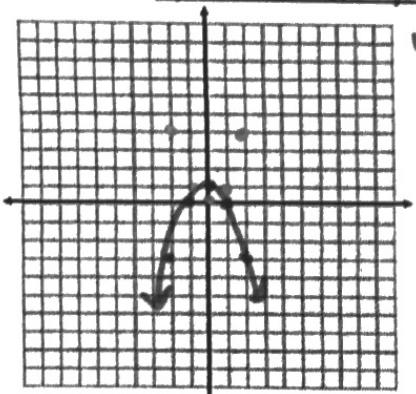
6. $h(x) = \log(x-2) + 4$ Parent: $y = \log(x)$

Transformations: right 2, up 4



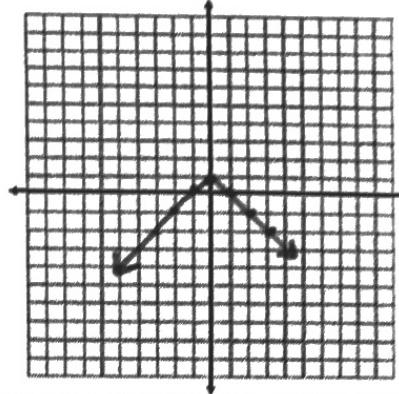
7. $h(x) = -x^2 + 1$ Parent: $y = x^2$

Transformations: reflect in x-axis up 1



8. $h(x) = -|x - 2|$ Parent: $y = |x|$

Transformations: reflect in x-axis up 1



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

9. Absolute value—vertical shift up 5, horizontal shift right 3. $y = |x - 3| + 5$

(same as identity)

10. Linear—vertical stretch/compression by $\frac{2}{5}$ $y = \frac{2}{5}x$

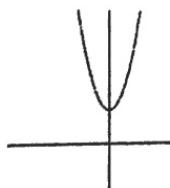
11. Root —flipped over the x axis, vertical shift down 2. $y = -\sqrt{x} - 2$

12. Exponential—vertical stretch by 8 $y = 8e^x$

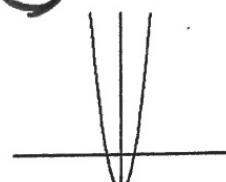
13. Quadratic—vertical stretch by 5, horizontal shift left 8. $y = 5(x+8)^2$

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

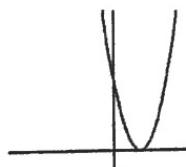
a.



b.



c.



d.

