CCSS Algebra 3 AA2: Transformations Retention Review Name Key

1. Write the equation that represents each function described below:

a. Parent Absolute Value function is shifted 2 units right and 4 units up.

$y = |x-2|+4$

b. Parent Square Root function is reflected over the y-axis and stretched vertically by a factor of 3.

$y = 3\sqrt{-x}$

c. Parent Cubic function is compressed vertically by a factor of ¼, translated left 3 units and down 5 units.

$y = \frac{1}{4}|x+3|-5$

d. Parent Quadratic function is reflected over the x-axis, stretched vertically by a factor of 3 and shifted down 4 units.

$y = -3x^2 - 4$

e. Parent Cube Root function is shifted down 2 units and compressed horizontally by a factor of 0.4.

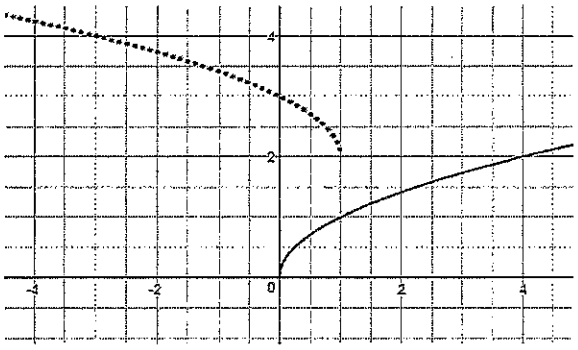
$y = \sqrt[3]{\frac{5}{2}x} - 2$

f. Parent Rational function is reflected over the x-axis, shifted left 4 units and up 5 units.

$y = \frac{-1}{x+4} + 5$

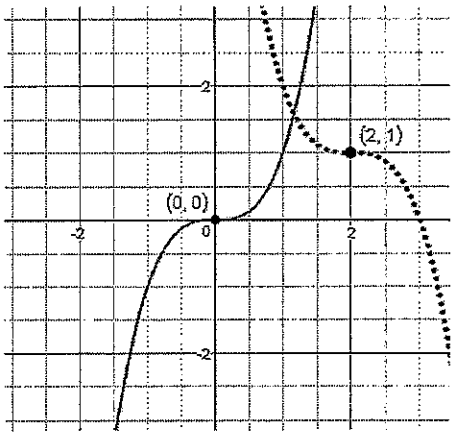
2. Describe the transformations used to go from the solid graph, $f(x)$, to the dotted graph, $g(x)$. Be specific.

a.



Reflect horizontally
Translate up 2, right 1

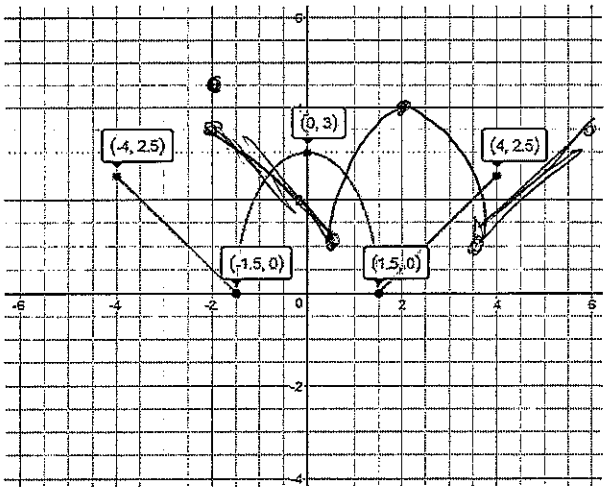
b.



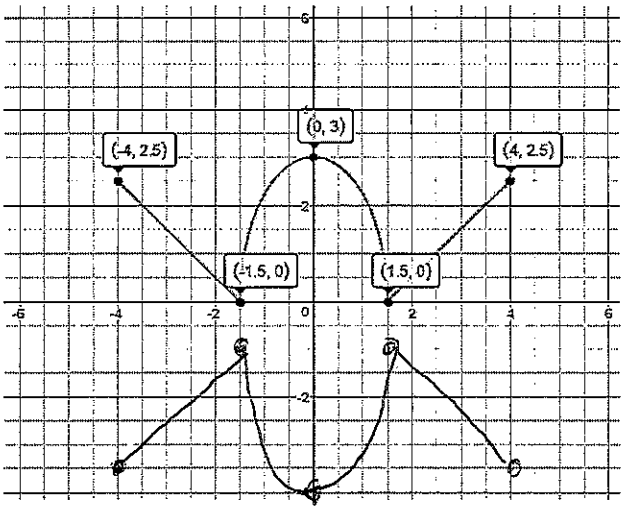

Reflect (Either way)
Translate right 2, up 1

3. The graph shows the function $h(x)$. Sketch the graph of

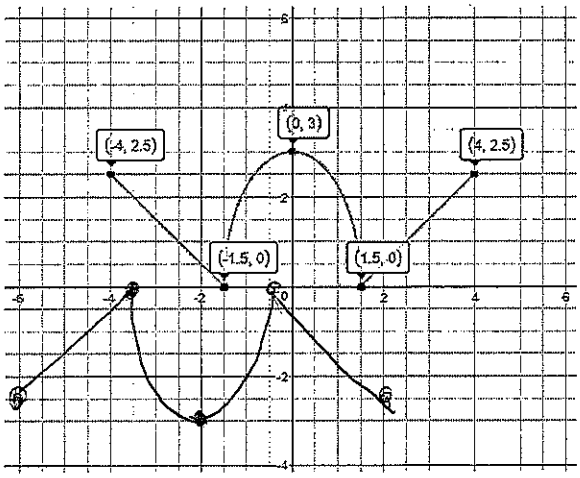
a. $h(x-2)+1$




b. $-h(x)-1$




c. $-h(x+2)$




4. Convert each quadratic function below to graphing form by Completing the Square and write down the vertex of the parabola.

a. $f(x)=x^2+6x+30$

$(x+3)^2+21$

V: $(-3, 21)$

b. $g(x)=x^2+10x-8$

$(x+5)^2-33$

V: $(-5, -33)$

c. $h(x)=x^2+5x+10$

$(x+2.5)^2+3.75$

V: $(-2.5, 3.75)$