Pre – Calculus
1.5 Transformations Worksheet

Name Key

For number 1 – 12, describe the transformation(s) of each function.

1. $g(x) = (x-2)^2 + 5$

Right 2
Up 5

2. $g(x) = -|x| + 3$

x-axis reflection
up 3

3. $g(x) = 4x - 2$

vertical stretch
down 2

4. $g(x) = \frac{3}{x-1}$

Vertical stretch [Further from asym]
Right 1

5. $g(x) = \frac{1}{3}x^3 - 4$

Vertical Compression
Down 4

6. $g(x) = -\sqrt{x+1}$

x-axis reflection
Left 1

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

x-axis reflection
up 4

8. $g(x) = |x+4|$

Left 4

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

Right 1

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

x-axis reflection
Left 2
down 1

11. $g(x) = \frac{1}{x+2} + 5$

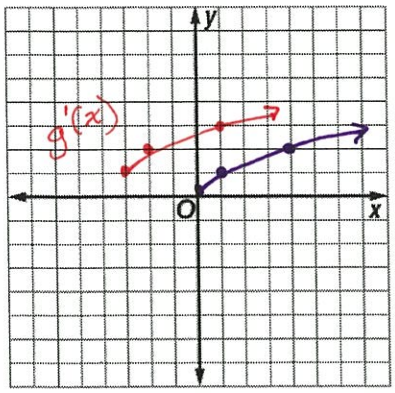
Left 2
Up 5

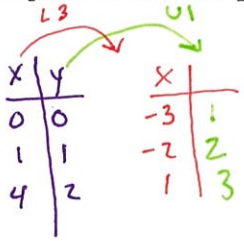
12. $g(x) = \frac{1}{2}\sqrt{x} - 10$

Vertical compression
Down 10

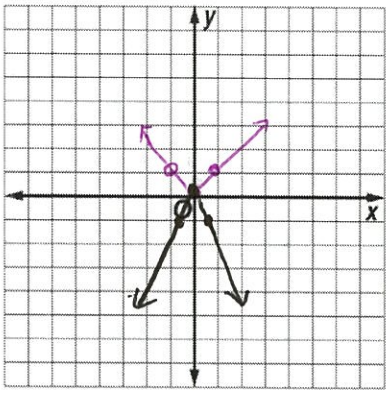
Use the parent function of *g(x)* to graph each function. <u>This should be done without a graphing calculator.</u>

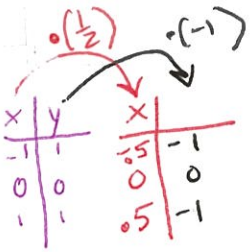
13. $g(x) = \sqrt{x+3} + 1$



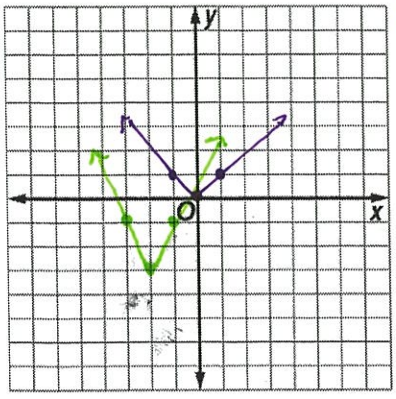


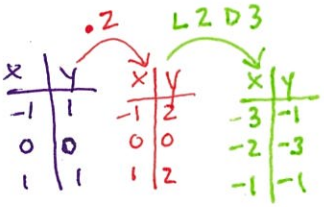
14. $g(x) = -|2x|$



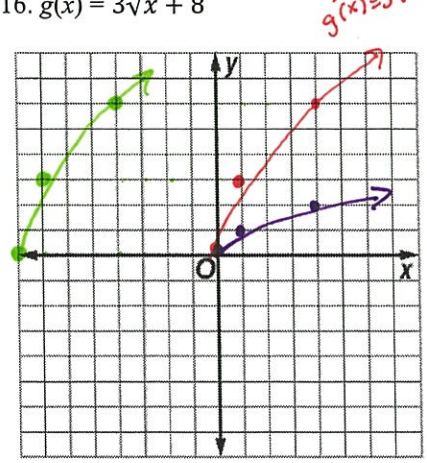


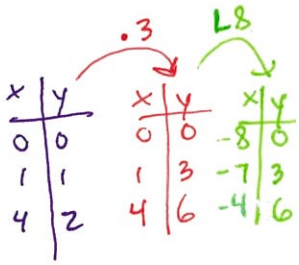
15. $g(x) = 2|x+2| - 3$





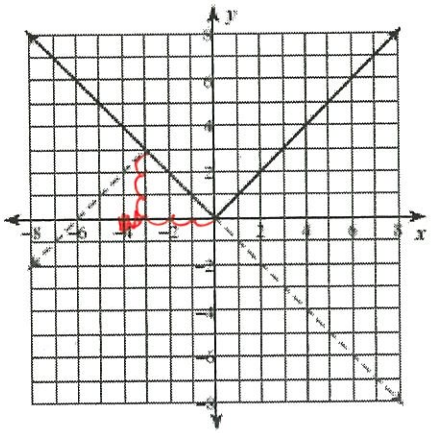
16. $g(x) = 3\sqrt{x+8}$





The parent function is graphed as the solid line, and the transformed function is graphed as the dashed line. Write an equation for the transformed function.

19.



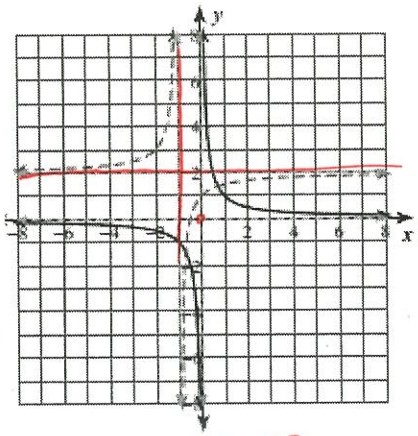
upside down

L 3

U 3

$y = -|x+3|+3$

20.



L 1, U 2

opposite quads

$y = \frac{-1}{x+1} + 2$