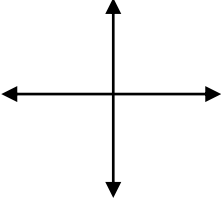
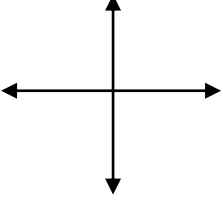
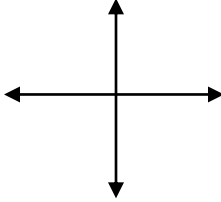
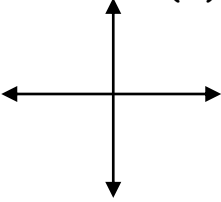
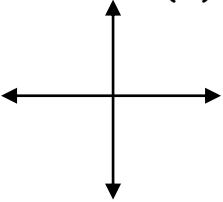
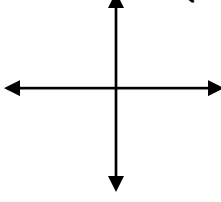
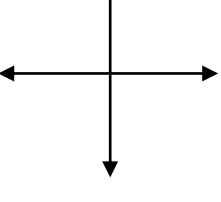
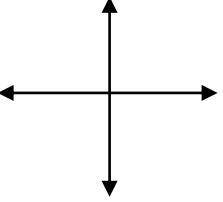
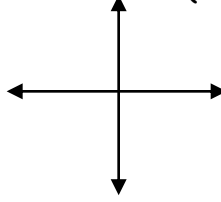
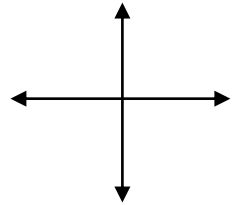
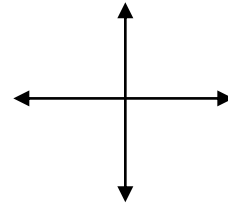
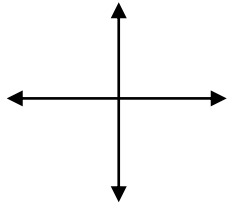
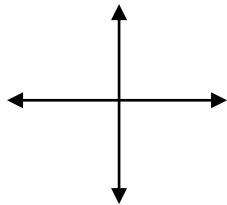
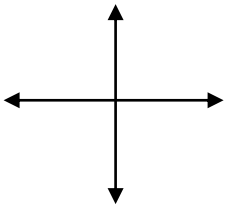


<p>Constant/(Horizontal) <math>f(x) = c</math></p> 	<p>Linear <math>f(x) = x</math></p> 	<p>Absolute Value <math>f(x) =  x </math></p> 
<p>Quadratic <math>f(x) = x^2</math></p> 	<p>Cubic <math>f(x) = x^3</math></p> 	<p>Quartic <math>f(x) = x^4</math></p> 
<p>Radical/Square Root <math>f(x) = \sqrt{x}</math></p> 	<p>Cube Root <math>f(x) = \sqrt[3]{x}</math></p> 	<p>Rational <math>f(x) = \frac{1}{x}</math></p> 

**Describe the transformations, domain and range and sketch the graph:**

1.  $f(x) = x^4 - 2$     2.  $f(x) = \frac{1}{x} + 2$     3.  $f(x) = (x - 2)^2$     4.  $f(x) = (x + 2)^4$     5.  $f(x) = -\sqrt{x}$



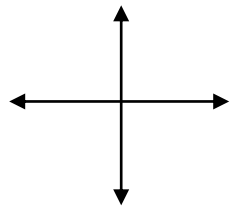
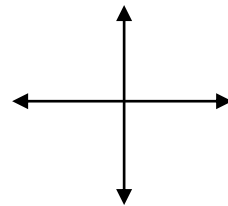
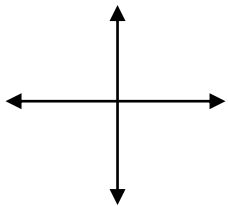
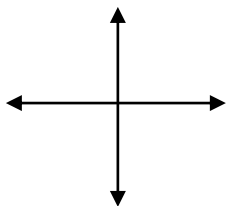
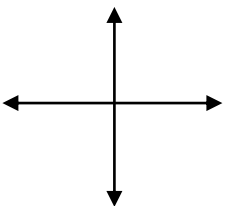
6.  $f(x) = \sqrt{-x}$

7.  $f(x) = 4x$

8.  $f(x) = \frac{1}{4}x^4$

9.  $f(x) = (4x)^3$

10.  $f(x) = \left(\frac{1}{4}x\right)^2$



**Multiple Transformations:** Given the p.g., describe the transformations, domain & range:

11. Parent Graph:  $y = x^3$

a)  $y = x^3 + 3$

b)  $y = -(x+5)^3$

c)  $y = -2(x^3 + 4)$

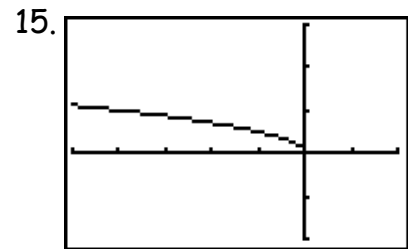
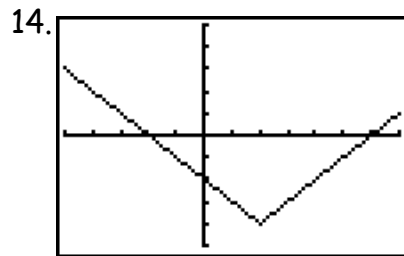
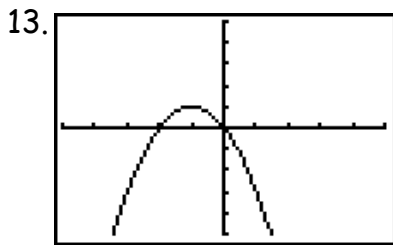
12. Parent Graph:  $f(x) = |x|$

a)  $f(x) = -|x+4| - 3$

b)  $f(x) = 4|x| - 5$

c)  $f(x) = \left| \frac{1}{2}x + 5 \right|$

Identify the parent graph, the transformation(s) shown, and write an equation for the function.

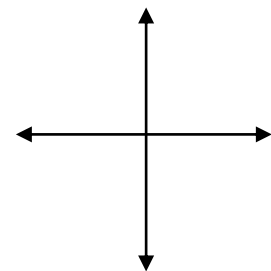
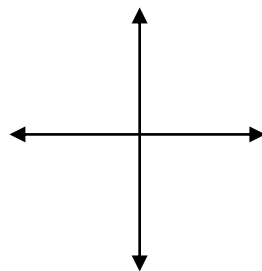
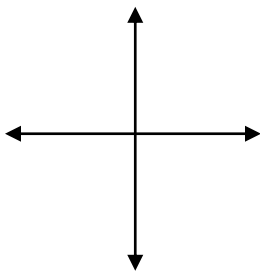


**Describe the transformations, domain and range and sketch the graph.**

16.  $y = \sqrt{x+4}$

17.  $y = \frac{1}{x+5} - 3$

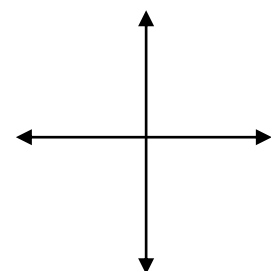
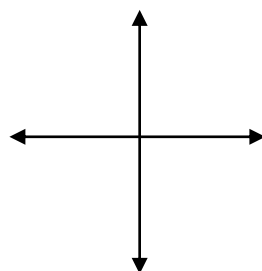
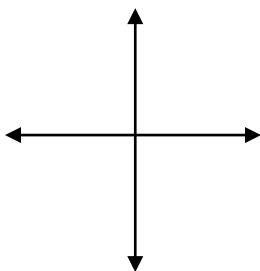
18.  $y = -(2x)^3 + 1$



19.  $y = 2x + 1$

20.  $y = \frac{1}{2} |-x + 4|$

21.  $g(x) = -\frac{1}{5} \sqrt[3]{x}$

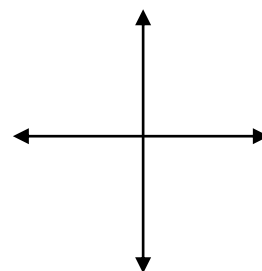
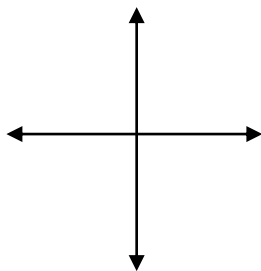
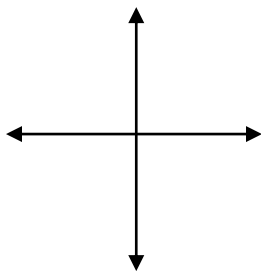


**Describe the transformations, domain and range and sketch the graph.**

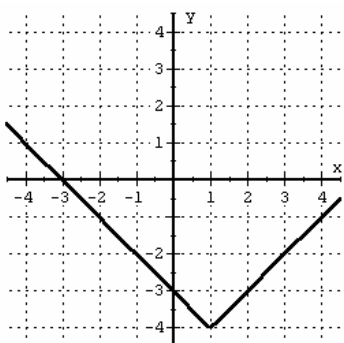
22.  $y = \frac{1}{3}\sqrt{x}$

23.  $y = -\left(\frac{2}{3}x + 5\right)^2 + 2$

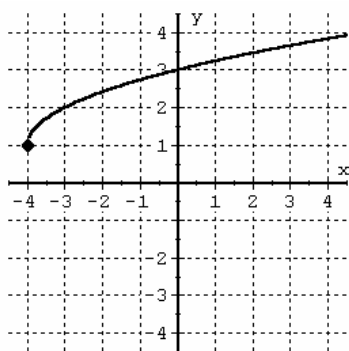
24.  $y = (x - 2)^3 + 3$



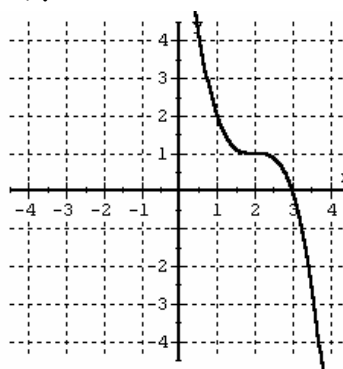
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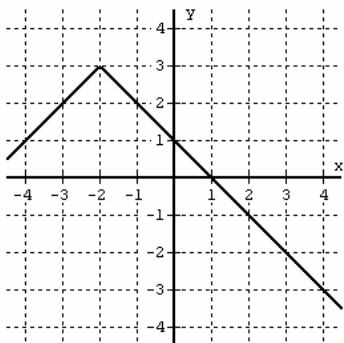
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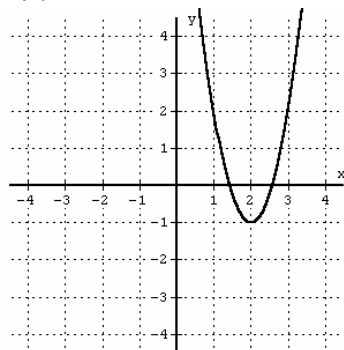
27.



28.



29.



30.

