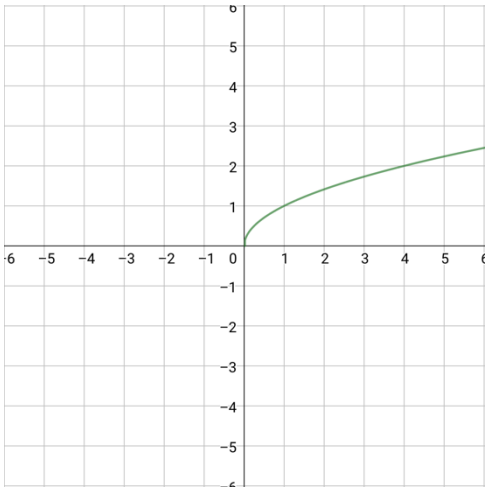
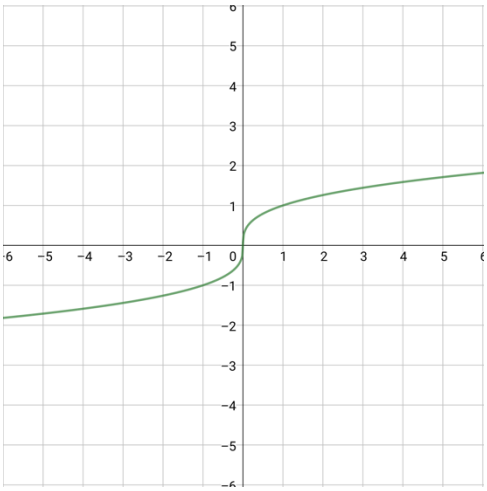
Algebra 2

5-03 Graphing Radical Equations

$y = \sqrt{x}$
Domain: _____
Range: _____



$y = \sqrt[3]{x}$
Domain: _____
Range: _____



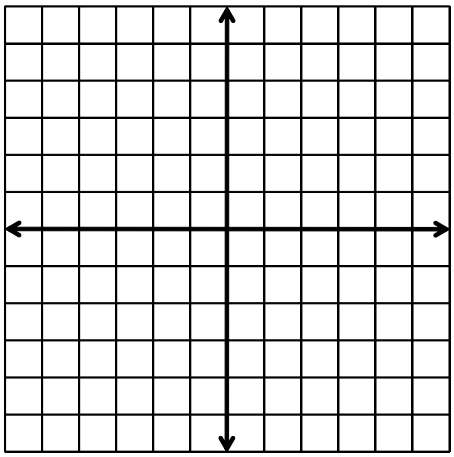
How graphs transform

$$y = a\sqrt{bx - h} + k$$
$$y = a\sqrt[3]{bx - h} + k$$

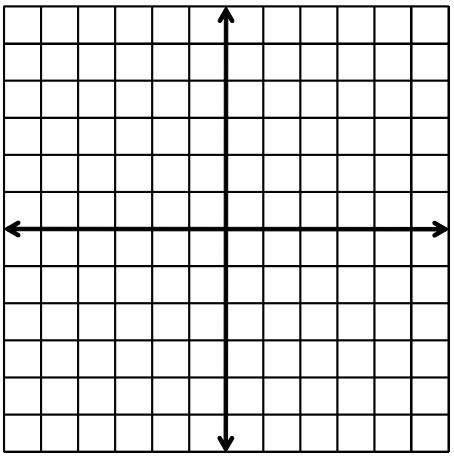
- Where
  - a _____ by factor of a
  - b _____ by factor of $\frac{1}{b}$
  - If a is –, _____ over _____
  - If b is –, _____ over _____
  - h _____
  - k _____
- Graph by making a _____.

Describe the transformation of f represented by g. Then graph each function.

$f(x) = \sqrt{x}; g(x) = \sqrt{x+2} - 3$



$f(x) = \sqrt[3]{x}; g(x) = -\sqrt[3]{2x}$



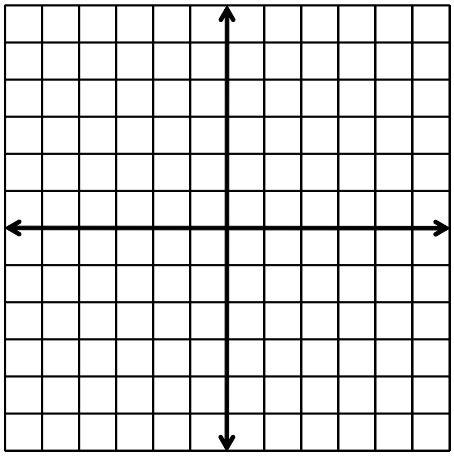
The function $E(d) = 0.25\sqrt{d}$ approximates the number of seconds it takes a dropped object to fall d feet on Earth. The function $J(d) = 0.63 \cdot E(d)$ approximates the number of seconds it takes a dropped object to fall d feet on Jupiter. How long does it take a dropped object to fall 81 feet on Jupiter?

Let the graph of g be a horizontal stretch by a factor of 3, followed by a translation 6 units right of the graph of $f(x) = \sqrt[3]{x}$. Write a rule for g.

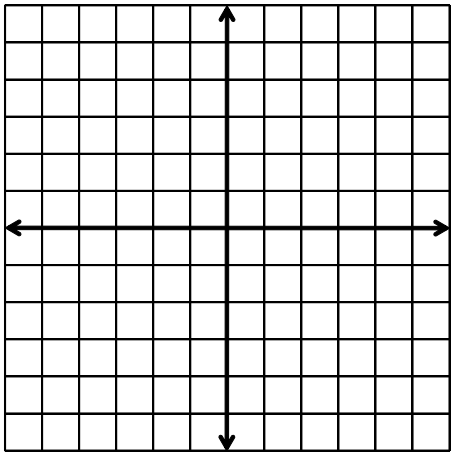
Graphing horizontal parabolas and circles

1. _____ the equation for y.
2. Create a _____.
3. _____ the points and _____ graph.

Graph $-\frac{1}{5}y^2 = x$. Identify the vertex and the direction that the parabola opens.



Graph $x^2 + y^2 = 49$. Identify the radius and the intercepts.



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