Discovering Graph Shape
Square Root Function

For each set of graphs, determine how the changing number changes the shape or position of the graph.

1. Graph the following equations (the expression inside the square root must be in parentheses):

    $$y = \sqrt{x} \qquad y = \sqrt{x+1} \qquad y = \sqrt{x+2} \qquad y = \sqrt{x-1} \qquad y = \sqrt{x-2}$$

    How do these changing numbers change the position of the graph?

2. Graph the following equations (only the x in the parenthesis):

    $$y = \sqrt{x} \qquad y = \sqrt{x}+1 \qquad y = \sqrt{x}+2 \qquad y = \sqrt{x}-1 \qquad y = \sqrt{x}-2$$

    How do these changing numbers change the position of the graph?

3. Graph the following equations (the expression inside the square root must be in parentheses):

    $$y = \sqrt{x} \qquad y = \sqrt{2x} \qquad y = \sqrt{3x} \qquad y = \sqrt{-x} \qquad y = \sqrt{-2x} \qquad y = \sqrt{-3x}$$

    How do these changing numbers change the position of the graph?

4. Graph the following equations:

    $$y = \sqrt{x} \qquad y = 2\sqrt{x} \qquad y = 3\sqrt{x} \qquad y = -\sqrt{x} \qquad y = -2\sqrt{x} \qquad y = -3\sqrt{x}$$

    How do these changing numbers change the position of the graph?

If a, b, c, and d represent real numbers, then the general form of a Square Root function can be written as:

$$y = a\sqrt{(bx+c)} + d$$

How do a, b, c, and d change the shape or position of the graph?

a:

b:

c:

d: