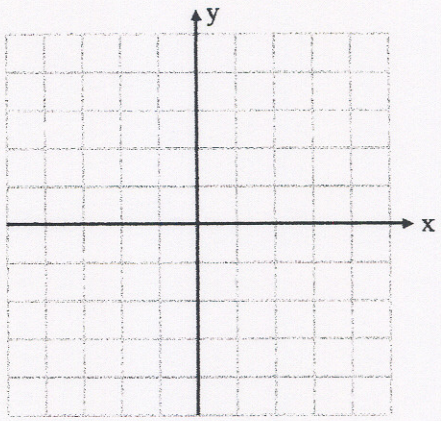
Activity: Graphing Square Root Functions

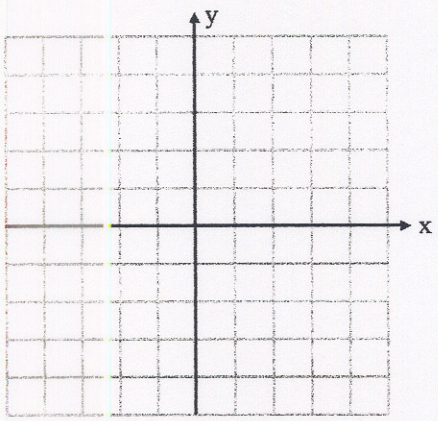
1. Using your graphing calculator - Graph $y = \sqrt{x}$

   $y = \sqrt{x}$ is called the "parent function" for square root equations

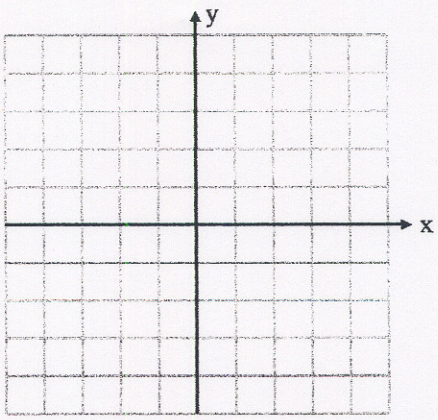


Graph the following:

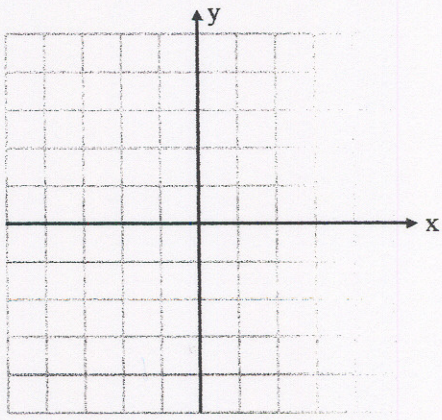
2. $y = -\sqrt{x}$



3. $y = \sqrt{x} + 3$



4. $y = \sqrt{x} - 3$



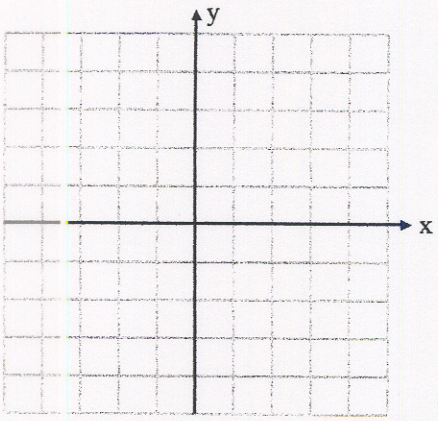
Describe what happened to $y = \sqrt{x}$ in each of the above graphs.

2b.

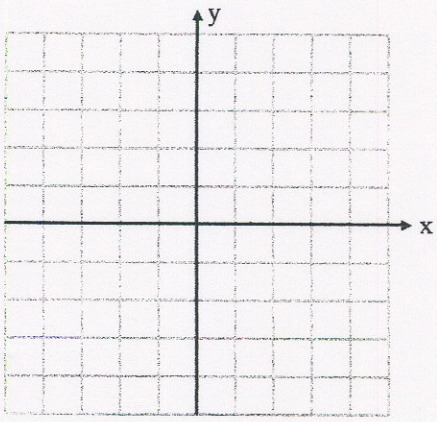
3b.

4b.

5. $y = \sqrt{x+3}$



6. $y = \sqrt{x-3}$



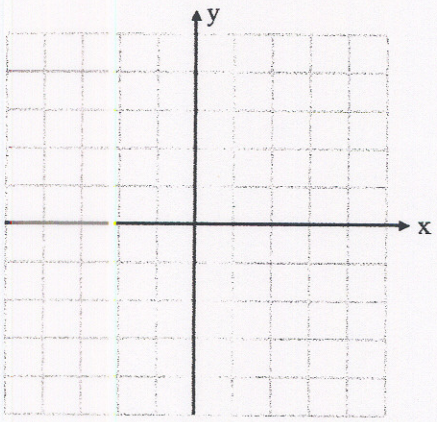
Describe what happened to $y = \sqrt{x}$ in each of the above graphs.

5b.

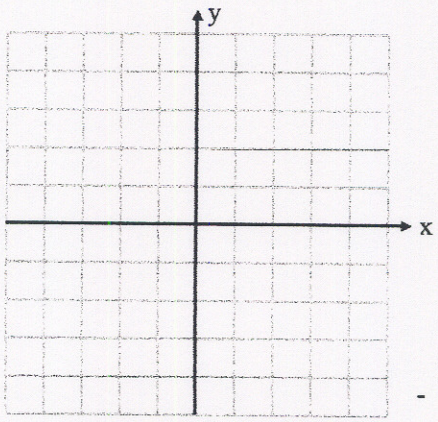
6b.

Now using what you know about shifting the parent function $y = \sqrt{x}$, graph the following without your calculator. Once you have graphed the equation check yourself with your calculator.

7. $y = -\sqrt{x} - 1$



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



9. $y = \sqrt{x+4} - 1$