

P4-5 Radicals: Domain & Range

Name: _____

Use a graphing calculator to sketch a graph of the given function to determine the domain and range of the function. Then describe the transformation compared to the parent function $y = \sqrt{x}$.

1) $y = \sqrt{x + 4}$ Domain: Range: Transformation:	2) $y = \sqrt{x - 5}$ Domain: Range: Transformation:
3) $y = \sqrt{x} + 3$ Domain: Range: Transformation:	4) $y = \sqrt{x} - 2$ Domain: Range: Transformation:
5) $y = \sqrt{x + 1} + 2$ Domain: Range: Transformation:	6) $y = \sqrt{x - 3} - 6$ Domain: Range: Transformation:

Investigate

These functions have an unexpected look. Make sure to use your graphing calculator to assist you as you discover their domain and ranges.

7) $y = \sqrt{3 - x}$ Domain: Range:	8) $y = \sqrt{2 - x}$ Domain: Range:
9) $y = \sqrt{2 - x} + 1$ Domain: Range:	10) $y = -\sqrt{x} - 3$ Domain: Range:
11) $y = -\sqrt{4 - x} + 2$ Domain: Range:	12) $y = -\sqrt{2 - x} - 1$ Domain: Range:

P4-5 Radicals: Domain & Range




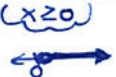


Name: _____

Use a graphing calculator to sketch the graph of the given function and determine its domain and range. Then describe the transformation compared to the parent function $y = \sqrt{x}$.

<p>1) $y = \sqrt{x+4}$ Domain: $[-4, \infty)$ Range: $[0, \infty)$ Transformation: Translation 4 units left</p>	<p>2) $y = \sqrt{x-5}$ Domain: $[5, \infty)$ Range: $[0, \infty)$ Transformation: Translation 5 units right</p>
<p>3) $y = \sqrt{x} + 3$ Domain: $[0, \infty)$ Range: $[3, \infty)$ Transformation: Translation 3 units up</p>	<p>4) $y = \sqrt{x} - 2$ Domain: $[0, \infty)$ Range: $[-2, \infty)$ Transformation: Translation 2 units down</p>
<p>5) $y = \sqrt{x+1} + 2$ Domain: $[-1, \infty)$ Range: $[2, \infty)$ Transformation: Translation 1 unit left and 2 units up</p>	<p>6) $y = \sqrt{x-3} - 6$ Domain: $[3, \infty)$ Range: $[-6, \infty)$ Transformation: Translation 3 units right and 6 units down</p>

Investigate

These functions have an unexpected look. Make sure to use your graphing calculator to assist you in discovering their domains and ranges.

<p>7) $y = \sqrt{3-x}$ Domain: $(-\infty, 3]$ Range: $[0, \infty)$</p> <p>$(3-x \geq 0)$ $3 \geq x$ </p>	<p>8) $y = \sqrt{2-x}$ Domain: $(-\infty, 2]$ Range: $[0, \infty)$</p> <p>$(2-x \geq 0)$ $2 \geq x$ </p>
<p>9) $y = \sqrt{2-x} + 1$ Domain: $(-\infty, 2]$ Range: $[1, \infty)$</p> <p>$(2-x)$ </p>	<p>10) $y = -\sqrt{x} - 3$ Domain: $[0, \infty)$ Range: $(-\infty, -3]$</p> <p>$(x \geq 0)$ </p>
<p>11) $y = -\sqrt{4-x} + 2$ Domain: $(-\infty, 4]$ Range: $(-\infty, 2]$</p> <p>$(4-x \geq 0)$ $4 \geq x$ </p>	<p>12) $y = -\sqrt{2-x} - 1$ Domain: $(-\infty, 2]$ Range: $(-\infty, -1]$</p> <p>$(2-x \geq 0)$ $2 \geq x$ </p>