Answer Key · Lesson 6.4: Radical Functions and Their Graphs

School Launch · Algebra II · Unit 6 · Worksheet A · for the parent

Key

1. D: $x \geq 1$; R: $y \geq -2$; $(1, -2)$

Give the domain and range of $f(x) = \sqrt{x - 1} - 2$, and its starting point.

2. D: $x \geq 1$; R: $y \geq -4$; $(1, -4)$

Give the domain and range of $f(x) = \sqrt{x - 1} - 4$, and its starting point.

3. D: $x \geq -2$; R: $y \geq -2$; $(-2, -2)$

Give the domain and range of $f(x) = \sqrt{x + 2} - 2$, and its starting point.

4. D: $x \geq -3$; R: $y \geq -2$; $(-3, -2)$

1. Radicand ≥ 0: $x + 3 \geq 0 \Rightarrow x \geq -3$
2. The root is ≥ 0, so $y \geq -2$; it starts at $(-3, -2)$

Give the domain and range of $f(x) = \sqrt{x + 3} - 2$, and its starting point.

5. D: $x \geq 6$; R: $y \geq -3$; $(6, -3)$

1. Radicand ≥ 0: $x - 6 \geq 0 \Rightarrow x \geq 6$
2. The root is ≥ 0, so $y \geq -3$; it starts at $(6, -3)$

Give the domain and range of $f(x) = \sqrt{x - 6} - 3$, and its starting point.

6. D: $x \geq 5$; R: $y \geq 4$; $(5, 4)$

1. Radicand ≥ 0: $x - 5 \geq 0 \Rightarrow x \geq 5$
2. The root is ≥ 0, so $y \geq 4$; it starts at $(5, 4)$

Give the domain and range of $f(x) = \sqrt{x - 5} + 4$, and its starting point.

7. D: $x \geq 5$; R: $y \geq -2$; $(5, -2)$

1. Radicand ≥ 0: $x - 5 \geq 0 \Rightarrow x \geq 5$
2. The root is ≥ 0, so $y \geq -2$; it starts at $(5, -2)$

Give the domain and range of $f(x) = \sqrt{x - 5} - 2$, and its starting point.

8. 7

1. $\sqrt[3]{4 + 4} + 5$
2. $= \sqrt[3]{8} + 5$
3. $= 2 + 5$
4. $= 7$

Evaluate $f(x) = \sqrt[3]{x + 4} + 5$ at $x = 4$.

9. 0

1. $\sqrt[3]{-1 + 2} - 1$
2. $= \sqrt[3]{1} - 1$
3. $= 1 - 1$
4. $= 0$

Evaluate $f(x) = \sqrt[3]{x + 2} - 1$ at $x = -1$.

10. 9

1. $\sqrt[3]{26 + 1} + 6$
2. $= \sqrt[3]{27} + 6$
3. $= 3 + 6$
4. $= 9$

Evaluate $f(x) = \sqrt[3]{x + 1} + 6$ at $x = 26$.