8-7 Radical Functions

Warm Up

Identify the domain and range of each function.

1. $f(x) = x^2 + 2$

2. $f(x) = 3x^3$

Use the description to write the quadratic function g based on the parent function $f(x) = x^2$.

3. f is translated 3 units up.

4. f is translated 2 units left.

8-8 Solving Radical Equations and Inequalities

Warm Up

Simplify each expression. Assume all variables are positive.

1. $2\sqrt{27x} + 3\sqrt{12x}$

2. $\sqrt{72y^5}$

3. $\sqrt[3]{(x+2)^3}$

4. $\sqrt{2(48y)}$

Write each expression in radical form.

5. $(x+6)^{\frac{1}{2}}$

6. $(3y+4)^{\frac{3}{5}}$

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8-7 Radical Functions

Warm Up

Identify the domain and range of each function.

1. $f(x) = x^2 + 2$ **D: $\mathbb{R}$; R: $\{y | y \geq 2\}$**

2. $f(x) = 3x^3$ **D: $\mathbb{R}$; R: $\mathbb{R}$**

Use the description to write the quadratic function g based on the parent function $f(x) = x^2$.

3. f is translated 3 units up.   **$g(x) = x^2 + 3$**

4. f is translated 2 units left.   **$g(x) = (x + 2)^2$**

8-8 Solving Radical Equations and Inequalities

Warm Up

Simplify each expression. Assume all variables are positive.

1. $2\sqrt{27x} + 3\sqrt{12x}$ **$12\sqrt{3x}$**

2. $\sqrt{72y^5}$ **$6y^2\sqrt{2y}$**

3. $\sqrt[3]{(x + 2)^3}$ **$x + 2$**

4. $\sqrt{2(48y)}$ **$4\sqrt{6y}$**

Write each expression in radical form.

5. $(x + 6)^{\frac{1}{2}}$ **$\sqrt{x + 6}$**

6. $(3y + 4)^{\frac{3}{5}}$ **$\sqrt[5]{(3y + 4)^3}$**

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