

## Chapter 2 Prerequisite Skills

1. Express each power as an equivalent radical.

a)  $x^{\frac{2}{3}}$

b)  $45^{0.5}$

c)  $\left(\frac{1}{24}\right)^{\frac{3}{2}}$

d)  $(g^3)^{\frac{1}{2}}$

2. Express each radical as a power.

a)  $\sqrt{x^5}$

b)  $\sqrt[3]{x^3}$

c)  $\sqrt[3]{x^2y^2}$

d)  $a^3b\sqrt{xy^5}$

3. Convert each mixed radical to an equivalent entire radical.

a)  $3\sqrt{6}$

b)  $5\sqrt[3]{2}$

c)  $-4\sqrt{5}$

4. Convert each entire radical to a mixed radical in simplest form.

a)  $\sqrt{40}$

b)  $\sqrt[3]{18a^3}$

c)  $-\sqrt{75b^9}$

d)  $\sqrt[3]{54x^9y^6}$

5. Evaluate without the aid of a calculator.

a)  $\sqrt{225}$

b)  $\sqrt[3]{125}$

c)  $\sqrt{4900}$

d)  $\sqrt[3]{8000}$

6. Express each product in simplest form.

a)  $(\sqrt{3})(\sqrt{6})$

b)  $(3x^2\sqrt{x})(-2x\sqrt{x})$

c)  $(4\sqrt{3}-7)^2$

d)  $(3\sqrt{x}-5\sqrt{y})(\sqrt{x}+2\sqrt{y})$

7. Identify any restrictions on the variable in each expression or equation.

a)  $7\sqrt{x}$

b)  $8\sqrt{x-4}$

c)  $\frac{5x+1}{x\sqrt{x+2}}$

d)  $\sqrt{z}-4=5$

e)  $-2\sqrt{3x+1}=4$

f)  $d-1=\sqrt{3d+5}$

8. State whether each equation is true or false. If false, rewrite the equation so it is true.

a)  $\sqrt{25}=\pm 5$

b)  $(-3)^2=-9$

c)  $-2^2=4$

9. Solve each radical equation.

a)  $5-\sqrt{3x}=1$

b)  $\sqrt{4x+1}+3=8$

c)  $\sqrt{x^2}=x$

d)  $\sqrt{7y+25}-y=1$



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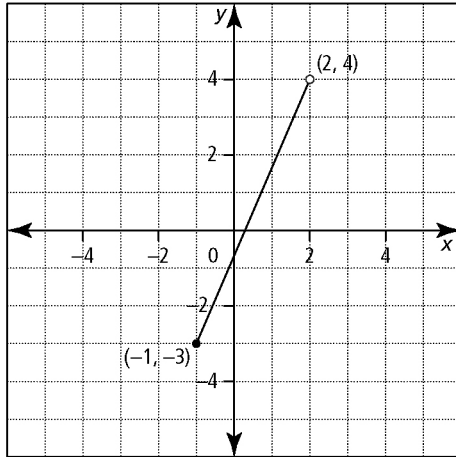
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**BLM 2-1**

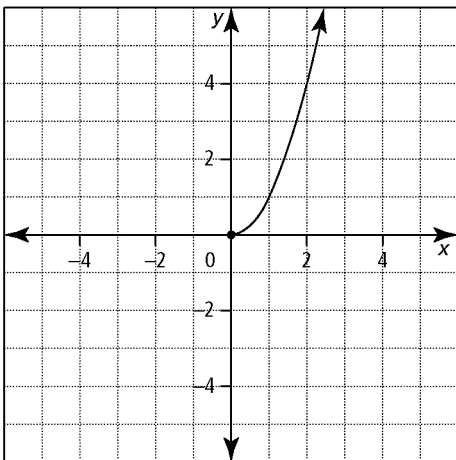
(continued)

**10.** Determine the domain and range of the function shown in each graph.

**a)**



**b)**



**11.** Express each domain using another notation.

**a)**  $\{x \mid x \geq -2, x \in \mathbb{R}\}$

**b)**  $\{x \mid -5 < x \leq 3, x \in \mathbb{R}\}$

**c)**  $[1.4, 6]$

**d)**  $(\infty, 4)$

**12.** Sketch the graph of a function having a domain of  $(-3, 2]$  and a range of  $(0, 5]$ .

**13.** Solve each equation for  $n$ . Leave each answer in simplest radical form.

**a)**  $7n - 3 = -4(n - 1) + 5$

**b)**  $2n^2 - n - 3 = 0$

**c)**  $n^2 = 4n + 6$

