

## Chapter 5 BLM Answers

## BLM 5-2 Chapter 5 Prerequisite Skills

1. a) perfect square b) perfect cube  
 c) perfect square d) both  
 2. a) 7 b) -2 c) -9 d) 14  
 3. a) -3 b) 12 c) 31 d) 26  
 4. a)  $\frac{1}{x^2}$  b)  $\frac{1}{y^2}$  c)  $\frac{1}{t^4}$  d)  $\frac{1}{g^3}$   
 5. a) 64 b) 38.4434 c) 0.0016  
 d) 1 e) 16 777 216 f) 0.1780  
 6. a)  $x^{\frac{17}{5}}$  b)  $\frac{1}{m^{\frac{23}{6}}}$  c)  $\frac{1}{d^{\frac{2}{3}}}$  d)  $\frac{1}{x^{\frac{15}{2}} y^{\frac{9}{2}}}$   
 7. a)  $3^{\frac{17}{6}} \approx 22.4824$  b)  $5^1 = 5$   
 c)  $2^3 = 8$  d)  $2^{\frac{12}{5}} \approx 0.1895$   
 8. a)  $(12p)^{\frac{3}{2}}$  b)  $3x^{\frac{3}{4}}$  c)  $st^{-\frac{5}{3}}$  d)  $y^{\frac{1}{3}}$   
 9. a) 16.4924 b) 16.1662 c) 1.4071 d) 2.2678

## BLM 5-4 Section 5.1 Extra Practice

1. a)  $3\sqrt{6}$  b)  $5\sqrt{14}$  c)  $7x\sqrt{2}$  d)  $11x^2y\sqrt{3xy}$   
 2. a)  $\sqrt{80}$  b)  $\sqrt{6877}$  c)  $\sqrt{81x^5}$  d)  $\sqrt{175x^2y^3}$   
 3. a)  $-\sqrt{14}, -2\sqrt{3}, 3\sqrt{5}, \sqrt{50}$  b)  $\sqrt{2}, \sqrt{18}, \sqrt{32}, 6\sqrt{2}$   
 c)  $-5\sqrt{3}, -\sqrt{60}, -3\sqrt{\frac{5}{2}}, -\sqrt{16}$  d)  
 $\sqrt{12}, \sqrt{20}, 2\sqrt{6}, 4\sqrt{3}$   
 4. a)  $12\sqrt{11}$  b)  $5\sqrt{3x} - 5\sqrt{2}$  c)  $16 + 8\sqrt{6}$   
 d)  $10\sqrt{5} - 4\sqrt{7y}$   
 5. a)  $21\sqrt{5d}$  b)  $6\sqrt{10e}$  c)  $13\sqrt{3}$  d)  $-\sqrt{7} - 4\sqrt{3}$   
 6. a)  $2\sqrt{x}, x \geq 0$  b)  $4x^2\sqrt{x}, x \geq 0$   
 c)  $-\sqrt{x} - 2x\sqrt{x}, x \geq 0$  d)  $7x^2\sqrt{y}, x \geq 0$   
 7. a)  $2\sqrt[3]{7}$  b)  $2x\sqrt[3]{x^2y}$  c)  $-4\sqrt[3]{5}$  d)  $-2x$   
 8.  $9\sqrt{2} + 3\sqrt{6}$

## BLM 5-5 Section 5.2 Extra Practice

1. a)  $12\sqrt{15}$  b)  $5\sqrt{2}$  c)  $\frac{21}{2}\sqrt{2}$  d)  $9x^6$   
 2. a)  $20 + 5\sqrt{2}$  b)  $15\sqrt{3} - 3\sqrt{5}$   
 c)  $2\sqrt{2} + 4$  d)  $6x - 3\sqrt{2x}, x \geq 0$   
 3. a)  $6 + 4\sqrt{3}$  b)  $146 + 23\sqrt{7}$  c)  $-49$  d)  $93 + 24\sqrt{15}$   
 4. a)  $x - 2\sqrt{x} - 3, x \geq 0$  b)  $x^2 - 5$

c)  $2x + 3\sqrt{x} - 2, x \geq 0$  d)  $4x + 4\sqrt{x} + 1, x \geq 0$

5. a) 2 b)  $\sqrt{6}$  c)  $\frac{3}{x^2}$  d)  $\frac{x^2\sqrt{3}}{4}$

6. a)  $\frac{\sqrt{30}}{3}$  b)  $\frac{4\sqrt{30}}{5}$  c)  $\frac{5\sqrt{3}}{3}$  d)  $\frac{\sqrt{30}}{14}$

7. a)  $\frac{3-\sqrt{3}}{3}$  b)  $\frac{2+2\sqrt{3}}{3}$

c)  $\sqrt{2}$  d)  $\frac{x\sqrt{2}+2\sqrt{x}}{x}$

8. a)  $2\sqrt{3} - 2$  b)  $\frac{-1-\sqrt{5}}{4}$

c)  $-\sqrt{30} - 3\sqrt{5}$  d)  $\frac{8\sqrt{3}+2\sqrt{10}-12-\sqrt{30}}{19}$

## BLM 5-6 Section 5.3 Extra Practice

1. a)  $x \geq -3, x = 46$  b)  $x \geq 0, x = \frac{16}{5}$   
 c)  $x \leq \frac{5}{3}, x = \frac{5}{3}$  d)  $x \leq 0, x = -288$   
 2. a)  $x = 28, x \geq 0$  b)  $y = 0, y \in \mathbb{R}$   
 c)  $v = 8, v \geq -1$  d)  $x = 17, x \geq -\frac{15}{2}$   
 3. a)  $m = 1, m \leq \frac{4}{3}$  b)  $x = -1, 5; x = -1, x \geq 1$   
 c)  $n = \frac{9+\sqrt{17}}{2}, n \geq 0$  d)  $x = -2 + \sqrt{5}, x \in \mathbb{R}$   
 4. a)  $x = 8, x \geq \frac{3}{2}$  b)  $y = -1, y = 5; y = -1, y \geq 1$   
 c) no solution d)  $p = 3, p \geq \sqrt{\frac{3}{2}}$   
 5. a)  $w = \frac{9}{4}, w \geq 0$  b)  $x = 0, x = 16; x \geq 0$   
 c)  $y = 4, y \geq 0$  d)  $x = 6, x \geq 5$   
 6. a)  $x = 169, x \neq 0$  b)  $x = 8, x \neq 0, 2$   
 7. The value  $x = -5$  is extraneous.  $x \geq -6$   
 8. 90.6 m

