

## Practice Set Answers Chapter 9

### 9.1

1. 8 2. Not a real number 3.  $-5$  4.  $-3$  5.  $-10$  6. 14 7.  $\frac{7}{10}$  8. 5 9.  $-1$  10.  $\frac{1}{6}$   
11. 4 12. 2 13. Not a real number 14. 5 15.  $-10$  16. 3.742 17. 8.944 18. 3.162  
19. Not a real number 20.  $-4.899$

### 9.2

1.  $3\sqrt{2}$  2.  $3\sqrt{5}$  3.  $2x\sqrt{5}$  4.  $2y\sqrt{14}$  5.  $6a^4\sqrt{2}$  6.  $2x^3\sqrt{11}$  7.  $3y^3\sqrt{2}$  8.  $\frac{\sqrt{3}}{2}$   
9.  $2y^6\sqrt{7}$  10.  $\frac{\sqrt[3]{3}}{2}$  11.  $10x^7\sqrt{3x}$  12.  $x^3\sqrt{10}$  13.  $6a^2\sqrt{3a}$  14. 2 15.  $2x^3\sqrt{5x}$   
16.  $5\sqrt{3}$  17.  $3x$  18.  $2a^3\sqrt{15}$  19.  $2y^4\sqrt{2}$  20.  $2x^2\sqrt[3]{10}$

### 9.3

1.  $9\sqrt{6}$  2.  $\sqrt{x}$  3.  $6\sqrt{5}$  4. Cannot be combined 5.  $7\sqrt{3}$  6.  $6\sqrt{3}$  7.  $15\sqrt{3y}$   
8.  $30\sqrt{3}$  9.  $3\sqrt{2}$  10.  $7\sqrt{10}$  11.  $\sqrt{30}+2\sqrt{6}$  12.  $\sqrt{14}-\sqrt{42}$  13.  $2\sqrt{5}+\sqrt{30}$  14. 29  
15.  $x+2\sqrt{2x}+2$  16.  $-5-2\sqrt{3}$  17. 48 18.  $29+\sqrt{5}$  19.  $24\sqrt{2}-20\sqrt{6}+4\sqrt{3}-10$   
20.  $x-6\sqrt{x}+9$

### 9.4

1.  $\frac{\sqrt{5}}{5}$  2.  $2\sqrt{3}$  3.  $\frac{\sqrt{33}}{11}$  4.  $\frac{\sqrt{ab}}{b}$  5.  $\frac{\sqrt{10}}{4}$  6.  $\frac{5\sqrt{3}}{6}$  7.  $\frac{3\sqrt{x}}{x}$  8.  $\frac{\sqrt{6}}{6}$  9.  $\frac{\sqrt{30}}{3}$   
10.  $\frac{x\sqrt{10}}{5}$  11.  $\frac{24+4\sqrt{2}}{17}$  12.  $\frac{6+2\sqrt{3}}{3}$  13.  $6\sqrt{3}+6\sqrt{2}$  14.  $7\sqrt{5}+14$  15.  $3-2\sqrt{2}$   
16.  $8\sqrt{5}+16-\sqrt{10}-2\sqrt{2}$  17.  $\frac{x+3\sqrt{x}}{x-9}$  18.  $\frac{x+7\sqrt{x}+12}{x-9}$

### 9.5

1. {64} 2. {144} 3. {15} 4. {525} 5. No Solution 6. {12} 7. {3, 1} 8. {4} 9. {23}  
10. {21} 11. {12} 12. {25} 13. {49} 14. {6} 15. {4} 16. {1} 17. {8} 18. {0}

### 9.6

1.  $\sqrt{25}; 5$  2.  $(\sqrt[3]{8})^2; 4$  3.  $(\sqrt{16})^3; 64$  4.  $\frac{1}{\sqrt{4}}; \frac{1}{2}$  5.  $\frac{1}{\sqrt[3]{27}}; \frac{1}{3}$  6.  $\sqrt{121}; 11$  7.  $\sqrt{\frac{4}{25}}; \frac{2}{5}$   
8.  $(\sqrt[3]{8})^2; 4$  9.  $(\sqrt[4]{81})^3; 27$  10.  $\frac{1}{\sqrt[3]{125}}; \frac{1}{5}$  11.  $(\sqrt[3]{1000})^2; 100$  12.  $\frac{1}{\sqrt{25}}; \frac{1}{5}$   
13.  $-(\sqrt[4]{16})^3; -8$  14.  $(\sqrt{49})^3; 343$  15.  $\left(\sqrt{\frac{16}{9}}\right)^3; \frac{64}{27}$  16.  $(\sqrt[3]{-27})^2; 9$  17.  $\sqrt{16}+\sqrt[3]{8}; 6$   
18.  $(\sqrt{25})^3-(\sqrt[3]{27})^2; 116$  19.  $\sqrt{16}\cdot\sqrt{16}; 16$  20.  $\frac{1}{\sqrt{49}}\cdot\frac{1}{\sqrt{49}}; \frac{1}{49}$