

## 2.3 Add and Subtract Radicals

**Simplify.**

1)  $-\sqrt{27} - 2\sqrt{3}$

2)  $-3\sqrt{20} + 3\sqrt{20}$

3)  $2\sqrt{24} + 3\sqrt{54}$

4)  $-2\sqrt{2} + 2\sqrt{18}$

5)  $-\sqrt{45} + 3\sqrt{5} + 2\sqrt{5}$

6)  $3\sqrt{20} - 3\sqrt{6} - \sqrt{6}$

7)  $2\sqrt{5} - \sqrt{27} - 2\sqrt{3}$

8)  $3\sqrt{20} + 3\sqrt{6} + 3\sqrt{54}$

9)  $-3\sqrt{12} - 3\sqrt{27} - \sqrt{5}$

10)  $3\sqrt{24} + 3\sqrt{27} - \sqrt{27}$

11)  $-2\sqrt{20} + 3\sqrt{5} - \sqrt{5}$

12)  $3\sqrt{20} - 2\sqrt{27} + 2\sqrt{5}$

13)  $-\sqrt{6} - \sqrt{24} + 2\sqrt{20}$

14)  $3\sqrt{18} + 3\sqrt{20} - 2\sqrt{18}$

15)  $-3\sqrt{24} + 2\sqrt{24} - \sqrt{5} + 2\sqrt{24}$

16)  $3\sqrt{6} - 2\sqrt{5} + 2\sqrt{20} - \sqrt{20}$

17)  $3\sqrt{6} + 2\sqrt{54} - \sqrt{18} + 3\sqrt{6}$

18)  $-3\sqrt{12} - 3\sqrt{12} + 3\sqrt{6} - 3\sqrt{54}$

**REVIEW: Simplify. Your answer should contain only positive exponents.**

19)  $3x^{\frac{5}{3}} \cdot x^{\frac{5}{3}}$

20)  $\frac{b^{\frac{1}{2}}}{b^{-2}}$

21)  $\left(\frac{4}{n^3}\right)^{-\frac{1}{2}}$

22) Simplify.

$$-4x(8x - 5) - (9x^2 - 10x + 4)$$

23) Find the sum.

$$5x - 4y + 9$$

$$2y + 7$$

24) Where are the zeros of  $x^3 - 5x^2 + 4x$ ?25) Write an equation to represent the following transformations to  $f(x) = x^2$ 

Shift Up 5  
Shift Left 4  
Stretch 3  
Reflection

26) Bob mowed  $2x^2 + 5x - 3$  yards on Monday,  $4x - 7$  yards on Tuesday, and  $3x^2 + 10$  yards on Wednesday.

a) How many yards did he mow in the three days?