

Practice 9-5

..... Example Exercises

Example 1

Simplify each expression.

1. $5\sqrt{2} + 3\sqrt{2}$

2. $8\sqrt{5} + 6\sqrt{5}$

3. $\sqrt{6} + 2\sqrt{6}$

4. $4\sqrt{7} + 3\sqrt{7}$

5. $8\sqrt{10} + \sqrt{10}$

6. $7\sqrt{3} - 2\sqrt{3}$

7. $10\sqrt{6} - 8\sqrt{6}$

8. $2\sqrt{11} - 6\sqrt{11}$

9. $-8\sqrt{15} + 10\sqrt{15}$

Example 2

Simplify each expression.

10. $3\sqrt{2} + \sqrt{8}$

11. $\sqrt{27} + 4\sqrt{3}$

12. $\sqrt{12} + 3\sqrt{3}$

13. $\sqrt{28} + 6\sqrt{7}$

14. $5\sqrt{3} - \sqrt{12}$

15. $\sqrt{18} - 2\sqrt{2}$

16. $6\sqrt{2} - \sqrt{32}$

17. $9\sqrt{5} - \sqrt{20}$

18. $\sqrt{12} + \sqrt{27}$

19. $\sqrt{32} - \sqrt{8}$

20. $4\sqrt{3} - \sqrt{12}$

21. $\sqrt{18} + \sqrt{27}$

Example 3

Solve each exercise by using the golden ratio $(1 + \sqrt{5}) : 2$.

22. The ratio of the width : height of a door is equal to the golden ratio.
The height of the door is 60 in. Find the width of the door in inches.

23. The ratio of the length : width of a pool is equal to the golden ratio.
The width is 30 ft. Find the length of the pool in feet.

Example 4

Simplify each expression.

24. $3(4 + 2\sqrt{5})$

25. $-2(6\sqrt{2} - 8)$

26. $5(3\sqrt{2} + 4\sqrt{3})$

27. $\sqrt{3}(6 + 2\sqrt{2})$

28. $\sqrt{5}(8 - 3\sqrt{5})$

29. $2\sqrt{3}(1 + 8\sqrt{2})$

30. $\sqrt{6}(\sqrt{2} - 6)$

31. $\sqrt{3}(4\sqrt{5} - 6\sqrt{3})$

32. $\sqrt{5}(\sqrt{12} - \sqrt{10})$