Name _____ Class _____ Date_____

6-3 Practice

Form G

Binomial Radical Expressions

Add or subtract if possible.

1. $9\sqrt{3}+2\sqrt{3}$

3. $3\sqrt{7}-7\sqrt[3]{x}$

5. $8\sqrt[3]{x}+2\sqrt[3]{y}$

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

9. $7\sqrt{x}+x\sqrt{7}$

Simplify.

11. $\sqrt{200}-\sqrt{72}$

13. $2\sqrt[4]{48}+3\sqrt[4]{243}$

15. $\sqrt[3]{250}-\sqrt[3]{54}$

17. $3\sqrt[4]{32}-2\sqrt[4]{162}$

Multiply.

19. $(1-\sqrt{5})(2-\sqrt{5})$

21. $(1-3\sqrt{7})(4-3\sqrt{7})$

23. $(\sqrt{2}+\sqrt{7})^2$

25. $(4-\sqrt{3})(2+\sqrt{3})$

27. $(3\sqrt{2}-2\sqrt{3})^2$

Multiply each pair of conjugates.

29. $(1-\sqrt{7})(1+\sqrt{7}$

31. $(3\sqrt{2}-2\sqrt{3})(3\sqrt{2}+2\sqrt{3})$

33. $(2\sqrt{7}+3\sqrt{3})(2\sqrt{7}-3\sqrt{3})$

Rationalize each denominator. Simplify the answer.

35. $\dfrac{2+\sqrt{14}}{\sqrt{7}+\sqrt{2}}$

Simplify. Assume that all the variables are positive.

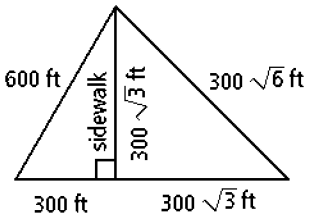
37. $\sqrt{28}+4\sqrt{63}-2\sqrt{7}$

39. $3\sqrt{12}+7\sqrt{75}-\sqrt{54}$

41. $3\sqrt{225x}+5\sqrt{144x}$

43. $(3\sqrt{y}-\sqrt{5})(2\sqrt{y}+5\sqrt{5})$

45. A park in the shape of a triangle has a sidewalk dividing it into two parts.



a. If a man walks around the perimeter of the park, how far will he walk?
b. What is the area of the park?

47. One solution to the equation $x^2 + 2x - 2 = 0$ is $-1 + \sqrt{3}$. To show this, let $x = -1 + \sqrt{3}$ and answer each of the following questions.
a. What is x^2?
b. What is $2x$?
c. Using your answers to parts (a) and (b), what is the sum $x^2 + 2x - 2$?