Practice

Form G

Simplifying Radicals

Simplify each radical expression.

1. $\sqrt{169}$

2. $\sqrt{200}$

3. $\sqrt{125}$

4. $-5\sqrt{112}$

5. $\sqrt{68}$

6. $3\sqrt{121}$

7. $\sqrt{63t^4}$

8. $\sqrt{48n^3}$

9. $-\sqrt{60m^7}$

10. $x\sqrt{150x^5}$

11. $-3\sqrt{45y^3}$

12. $-2b\sqrt{136b^2}$

Simplify each product.

13. $\sqrt{6} \cdot \sqrt{30}$

14. $\sqrt{5} \cdot \sqrt{70}$

15. $2\sqrt{3} \cdot \sqrt{96}$

16. $-4\sqrt{7} \cdot \sqrt{42}$

17. $\sqrt{4a} \cdot \sqrt{12a^5}$

18. $\sqrt{2n^2} \cdot \sqrt{30n}$

19. $-3\sqrt{40x} \cdot 2\sqrt{56x^5}$

20. $\frac{3}{4}\sqrt{12t^3} \cdot \sqrt{20t^3}$

21. $4\sqrt{14d^2} \cdot \frac{1}{2}\sqrt{28d^3}$

22. A pool is shaped like a rectangle with a length 4 times its width w. What is an expression for the distance between opposite corners of the pool?

23. Evelyn rode her horse along a triangular path. The distance she traveled south was five times the distance she traveled east. Then she rode directly back to her starting point. What is an expression for the total distance she rode?

Name _____ Class _____ Date _____

Practice (continued)   *Form G*

Simplifying Radicals

Simplify each radical expression.

24. $\sqrt{\dfrac{36}{49}}$ **25.** $\sqrt{\dfrac{81}{16}}$ **26.** $\sqrt{\dfrac{100}{225}}$

27. $\sqrt{\dfrac{18y}{36y^3}}$ **28.** $\sqrt{\dfrac{49x^5}{25x}}$ **29.** $\sqrt{\dfrac{16a^2}{4b^4}}$

30. $\dfrac{\sqrt{5}}{\sqrt{2}}$ **31.** $\dfrac{\sqrt{12}}{\sqrt{15}}$ **32.** $\dfrac{\sqrt{72}}{\sqrt{40}}$

33. $\dfrac{\sqrt{25b}}{\sqrt{5b^3}}$ **34.** $\dfrac{\sqrt{24}}{\sqrt{3n}}$ **35.** $\dfrac{\sqrt{8}}{\sqrt{30m^2}}$

36. You are making a mosaic design on a square table top. You have already covered half of the table top with 150 1-inch square tile pieces.
   a. What are the dimensions of the table top?
   b. What is the measure of the diagonal from one corner to the opposite corner of the table top?

37. The equation $r = \sqrt{\dfrac{SA}{4\pi}}$ gives the radius r of a sphere with surface area SA. What is the radius of a sphere with the given surface area? Use 3.14 for π.
   a. 1256 in^2 **b.** 200.96 cm^2 **c.** 379.94 ft^2

38. Open-Ended What are three radical expressions that simplify to $2x\sqrt{3}$?