Chapter 11

Extra Practice: Skills and Word Problems

Lesson 11-1 Simplify each radical expression.

1. $\frac{\sqrt{27}}{\sqrt{81}}$
2. $\sqrt{\frac{25}{4}}$
3. $\sqrt{\frac{50}{9}}$
4. $\frac{\sqrt{72}}{\sqrt{50}}$
5. $\sqrt{25} \cdot \sqrt{4}$
6. $\sqrt{27} \cdot \sqrt{3}$
7. $\sqrt{\frac{44x^4}{11}}$
8. $\frac{\sqrt{3c^2}}{\sqrt{27}}$
9. $\sqrt{45} \cdot \sqrt{18}$

Lesson 11-2 Simplify each radical expression.

10. $\sqrt{75} - 4\sqrt{75}$
11. $\sqrt{5}(\sqrt{20} - \sqrt{80})$
12. $\sqrt{6}(\sqrt{6} - 3)$
13. $3\sqrt{300} + 2\sqrt{27}$
14. $5\sqrt{2} \cdot 3\sqrt{50}$
15. $\sqrt{8} - 4\sqrt{2}$
16. $\frac{\sqrt{z^3}}{\sqrt{5z}}$
17. $(\sqrt{5} + 1)(\sqrt{5} - 1)$
18. $(\sqrt{3} + \sqrt{2})^2$
19. $\frac{1}{\sqrt{2} + 1}$
20. $\frac{2}{\sqrt{2} - 2}$
21. $\frac{\sqrt{3} + 1}{\sqrt{2} + 1}$

Lesson 11-3 Solve each radical equation. Check your solution.

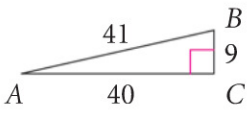
22. $\sqrt{3x + 4} = 1$
23. $6 = \sqrt{8x - 4}$
24. $2x = \sqrt{14x - 6}$
25. $\sqrt{2x + 5} = \sqrt{3x + 1}$
26. $2x = \sqrt{6x + 4}$
27. $\sqrt{5x + 11} = \sqrt{7x - 1}$
28. $\sqrt{3x - 2} = x$
29. $\sqrt{x + 7} = x + 1$
30. $\sqrt{x + 3} = \frac{x + 9}{5}$

Lesson 11-4 Find the domain of each function. Then graph the function.

31. $y = \sqrt{x + 5}$
32. $y = \sqrt{x} - 2$
33. $y = \sqrt{x + 1}$
34. $y = \sqrt{x} - 4$
35. $y = \sqrt{x - 3}$
36. $y = \sqrt{x} + 6$

Lesson 11-5 Use $\triangle ABC$ to find the value of each expression.

37. sin A
38. cos A
39. tan A
40. sin B
41. cos B
42. tan B



Find the value of each expression. Round to the nearest ten-thousandth.

43. sin 72°
44. cos 29°
45. tan 48°
46. tan 52°
47. sin 65°
48. cos 43°

Lesson 11-6

49. A forester is 50 m from the base of a tree and measures the angle between the ground and the top of the tree. If the angle is 76°, find the height of the tree. Round your answer to the nearest meter.

50. A pilot is flying at an altitude of 25,000 ft. The angle of depression from her position to the start of runway is 2°. How far is the airplane from the start of the runway (in ground distance)?