

1. Simplify.

$$\sqrt{32}$$

$$\sqrt{32} = \square \text{ (Type an exact answer, using radicals as needed. Simplify your answer.)}$$

2. Simplify.

$$\sqrt{45}$$

$$\sqrt{45} = \square \text{ (Type an exact answer, using radicals as needed. Simplify your answer.)}$$

3. Simplify.

$$\sqrt{27}$$

$$\sqrt{27} = \square \text{ (Type an exact answer, using radicals as needed. Simplify your answer.)}$$

4. Simplify.

$$\sqrt{72}$$

$$\sqrt{72} = \square \text{ (Type an exact answer, using radicals as needed. Simplify your answer.)}$$

5. Simplify. Assume that all variables are nonnegative real numbers.

$$\sqrt{100x^5}$$

$$\sqrt{100x^5} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

6. Simplify. Assume that all variables are nonnegative real numbers.

$$\sqrt{96a^6b^7}$$

$$\sqrt{96a^6b^7} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

7. Simplify the expression. Assume that all variables are nonnegative real numbers.

$$\sqrt{18x^9yz^4}$$

$$\sqrt{18x^9yz^4} = \square$$

(Simplify your answer. Use positive exponents only. Type an exact answer, using radicals as needed.)

8. Simplify the given expression.

$$3\sqrt{3} + 5\sqrt{3}$$

$$3\sqrt{3} + 5\sqrt{3} = \square \text{ (Type an exact answer, using radicals as needed.)}$$

9. Combine.

$$5\sqrt{11} + \sqrt{3} - 3\sqrt{3}$$

$$5\sqrt{11} + \sqrt{3} - 3\sqrt{3} = \square$$

(Type an exact answer, using radicals as needed. Simplify your answer. Do not factor.)

10. Combine.

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

$$6\sqrt{32} - \sqrt{2} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

11. Combine.

$$6\sqrt{8} + \sqrt{50}$$

$$6\sqrt{8} + \sqrt{50} = \square$$

(Type an exact answer, using radicals as needed. Simplify your answer.)

12. Combine.

$$\sqrt{32} + \sqrt{18} - 3\sqrt{98}$$

$$\sqrt{32} + \sqrt{18} - 3\sqrt{98} = \square$$

(Type an exact answer, using radicals as needed. Simplify your answer.)

13. Combine.

$$\sqrt{147} - 4\sqrt{108} + \sqrt{12}$$

$$\sqrt{147} - 4\sqrt{108} + \sqrt{12} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

14. Combine.

$$-3\sqrt{32} + 5\sqrt{8} + 2\sqrt{2}$$

$$-3\sqrt{32} + 5\sqrt{8} + 2\sqrt{2} = \square$$

(Type an exact answer, using radicals as needed. Simplify your answer.)

15. Combine. Assume that all variables represent nonnegative real numbers.

$$6\sqrt{75x} - 5\sqrt{48x}$$

$$6\sqrt{75x} - 5\sqrt{48x} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

16. Combine. Assume that all variables represent nonnegative real numbers.

$$4\sqrt{3x} + 6\sqrt{48x} + 7\sqrt{108x}$$

$$4\sqrt{3x} + 6\sqrt{48x} + 7\sqrt{108x} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

17. Combine. Assume that all variables represent nonnegative real numbers.

$$\sqrt{20x} - \sqrt{98x} + \sqrt{50x}$$

$$\sqrt{20x} - \sqrt{98x} + \sqrt{50x} = \square$$

(Simplify your answer. Type an exact answer, using radicals as needed.)

18. We can approximate the amount of current in amps  $I$  (amperes) drawn by an appliance in the home using the formula  $I = \sqrt{\frac{P}{R}}$ , where  $P$  is the power measured in watts and  $R$  is the resistance measured in ohms. What is the current  $I$  if  $P = 2000$  watts and  $R = 50$  ohms?
- If  $P = 2000$  watts and  $R = 50$  ohms, the current  $I$  is approximately  amps.  
(Round answer to three decimal places.)