

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the equation.

1) $7x(8x - 7) = 0$

1) _____

2) $x^2 - 4x = 96$

2) _____

3) $x(4x + 18) = 10$

3) _____

4) $5x^2 - 4x - 9 = 0$

4) _____

5) $x^2 - 81 = 80x$

5) _____

6) $25x^2 - 11 = 50x$

6) _____

7) $(x + 6)(x + 1) = 66$

7) _____

Simplify. Assume that all variables represent positive numbers.

8) $\sqrt{y^{13}}$

8) _____

9) $\sqrt{64x^7}$

9) _____

10) $\sqrt{108x^2}$

10) _____

11) $\sqrt{12x^{100}}$

11) _____

12) $\sqrt{27k^7q^8}$

12) _____

13) $\sqrt{36x^{12}z^{11}}$

13) _____

14) $\sqrt{\frac{x^{15}}{36}}$

14) _____

15) $\sqrt{\frac{90}{x^2}}$

15) _____

Add or subtract by first simplifying each radical and then combining any like radical terms. Assume that all variables represent positive real numbers.

16) $\sqrt{2} + \sqrt{32}$ 16) _____

17) $\sqrt{48} - \sqrt{243}$ 17) _____

18) $6\sqrt{3} + 7\sqrt{27}$ 18) _____

Multiply and simplify. Assume that all variables represent positive real numbers.

19) $(10\sqrt{y})^2$ 19) _____

20) $\sqrt{2}(\sqrt{14} + \sqrt{2})$ 20) _____

21) $(\sqrt{5} + \sqrt{13})(\sqrt{7} - \sqrt{13})$ 21) _____

22) $(9\sqrt{7} + 3)^2$ 22) _____

Rationalize the denominator and simplify. Assume that all variables represent positive real numbers.

23) $\frac{\sqrt{3}}{\sqrt{13}}$ 23) _____

24) $\frac{2}{\sqrt{11}}$ 24) _____

25) $\sqrt{\frac{10}{x}}$ 25) _____