

Name \_\_\_\_\_

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

Solve the equation.

1)  $4x(8x - 3) = 0$

1) \_\_\_\_\_

2)  $x^2 - 10x = 24$

2) \_\_\_\_\_

3)  $x(3x + 10) = 8$

3) \_\_\_\_\_

4)  $2x^2 - 7x - 9 = 0$

4) \_\_\_\_\_

5)  $x^2 - 25 = 24x$

5) \_\_\_\_\_

6)  $25x^2 + 12 = -40x$

6) \_\_\_\_\_

7)  $(x + 5)(x + 1) = 32$

7) \_\_\_\_\_

Simplify. Assume that all variables represent positive numbers.

8)  $\sqrt{y^5}$

8) \_\_\_\_\_

9)  $\sqrt{16x^7}$

9) \_\_\_\_\_

10)  $\sqrt{72x^2}$

10) \_\_\_\_\_

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

11) \_\_\_\_\_

12)  $\sqrt{500k^7q^8}$

12) \_\_\_\_\_

13)  $\sqrt{169x^6z^7}$

13) \_\_\_\_\_

14)  $\sqrt{\frac{x^{17}}{64}}$

14) \_\_\_\_\_

15)  $\sqrt{\frac{1100}{x^2}}$

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)  $\sqrt{2} + \sqrt{162}$

16) \_\_\_\_\_

17)  $\sqrt{27} + \sqrt{243}$

17) \_\_\_\_\_

18)  $-8\sqrt{2} - 2\sqrt{18}$

18) \_\_\_\_\_

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

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

19) \_\_\_\_\_

20)  $\sqrt{5}(\sqrt{15} + \sqrt{5})$

20) \_\_\_\_\_

21)  $(\sqrt{17} + \sqrt{19})(\sqrt{5} - \sqrt{19})$

21) \_\_\_\_\_

22)  $(2\sqrt{7} - 2)^2$

22) \_\_\_\_\_

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

23)  $\frac{\sqrt{7}}{\sqrt{11}}$

23) \_\_\_\_\_

24)  $\frac{7}{\sqrt{3}}$

24) \_\_\_\_\_

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

25) \_\_\_\_\_