Worksheet Section 7.7 v01
F2009 Math 098
Dressler

Name_____

Solve the equation.

1) $\sqrt{x} = 25$

2) $\sqrt{x} - 8 = 0$

3) $\sqrt{x + 2} = 6$

4) $\sqrt{x + -7} - 13 = 0$

5) $\sqrt{8x - 7} = 7$

6) $\sqrt{x - 3} + 4 = 5$

7) $\sqrt{6x - 7} = \sqrt{x + 12}$

8) $-\sqrt{x + 2} = -2$

9) $\sqrt{k} + 7 = 6$

10) $\sqrt{2k + 1} = 5$

11) $3\sqrt{x} = \sqrt{3x + 24}$

12) $6\sqrt{x - 4} = \sqrt{33x - 123}$

13) $7\sqrt{x} + 3 = 59$

14) $\sqrt{3x + 3} + 2 = 10$

15) $\sqrt{9x^2 + 11x - 44} = 3x$

16) $\sqrt{18x - 27} = x + 3$

17) $\sqrt{18x - 9} - 4 = x$

18) $x - \sqrt{3x - 2} = 4$

19) $\sqrt{2x} + 6 = x + 2$

20) $\sqrt{x - 3} = x - 5$

21) $\sqrt{x} + 2 = \sqrt{x + 32}$

22) $\sqrt{x} - 1 = \sqrt{x - 7}$

23) $\sqrt{x} - 2 = \sqrt{x + 24}$

Solve the problem.

24) The formula $v = \sqrt{2.5r}$ can be used to estimate the maximum safe velocity v, in miles per hour, at which a car can travel along a curved road with a radius of curvature r, in feet. To the nearest whole number, find the radius of curvature if the maximum safe velocity is 25.

25) If the product of 4 and the square root of a number is increased by 5 the result is 33. Find the number.

26) If the product of 7 and the square root of a number is increased by 2 the result is 37. Find the number.

27) If the product of 5 and the square root of a number is increased by 4 the result is 39. Find the number.

28) If the product of 5 and the square root of a number is increased by 1 the result is 21. Find the number.

29) A number is 8 more than the principal square root of four times the number. Find the number.

30) For a cone, the formula $r = \sqrt{\frac{3V}{\pi h}}$ describes the relationship between the radius r of the base, the volume V, and the height h. Solve the formula for V.

31) The formula $v = \sqrt{2.5r}$ can be used to estimate the maximum safe velocity v, in miles per hour, at which a car can travel along a curved road with a radius of curvature r, in feet. To the nearest whole number, find the radius of curvature if the maximum safe velocity is 30.

32) The formula $v = \sqrt{2.5r}$ can be used to estimate the maximum safe velocity v, in miles per hour, at which a car can travel along a curved road with a radius of curvature r, in feet. To the nearest whole number, find the radius of curvature if the maximum safe velocity is 35.

33) The maximum distance d in kilometers that you can see from a height h in meters is given by the formula $d = 3.5\sqrt{h}$. How high above the ground must you be to see 30 kilometers. (Round to the nearest tenth of a meter.)

34) The maximum distance d in kilometers that you can see from a height h in meters is given by the formula $d = 3.5\sqrt{h}$. How high above the ground must you be to see 65 kilometers. (Round to the nearest tenth of a meter.)

Answer Key
Testname: WS7.7V01

1) 625
2) $x = 64$
3) $x = 34$
4) 176
5) $x = 7$
6) 4
7) $x = \frac{19}{5}$
8) no solution
9) no solution
10) 12
11) 4
12) 7
13) 64
14) $\frac{61}{3}$
15) $x = 4$
16) $x = 6$
17) $x = 5$
18) $x = 9$
19) $x = 8$
20) $x = 7$
21) $x = 49$
22) $x = 16$
23) no solution
24) 250 ft.
25) 49
26) 25
27) 49
28) 16
29) 16
30) $V = \frac{\pi r^2 h}{3}$
31) 360 ft.
32) 490 ft.
33) 73.5 m
34) 344.9 m