Name_____ Date_____ Period_____

SOLVE BY SQUARE ROOT WORKSHEET

Solve the equations below using the square root method.

Example:

$5x^2 = 20 \rightarrow x^2 = \frac{20}{5}$

$x^2 = 4 \rightarrow \sqrt{x^2} = \sqrt{4} \rightarrow x = \pm 2$

1. $x^2 + 16 = 41$

2. $9 - 4x^2 = 3$

3. $x^2 - 10 = 80$

4. $(x-3)^2 = 7$

5. $x^2 - 4x + 4 = 10$

6. $3(x-4)^2 = 15$

7. $2x^2 + 5 = 19$

8. $9(2y-3)^2 + 8 = 449$

9. $4(6w-1)^2 - 5 = 223$

10. $\frac{2}{3}x^2 - 4 = 12$

Application Problems:

11. The equation $h = 0.019s^2$ gives the height h (in feet) of the largest ocean waves when the wind speed is s knots. How fast is the wind blowing if the largest waves are 12 feet high?

12. The area A in square feet of a projected picture on a movie screen is given by $A = 0.16d^2$, where d is the distance from the projector to the screen in feet. At what distance will the projected picture have an area of 100 square feet?

13. The product of two positive numbers is 140. Determine the numbers if the larger is 5.6 times the smaller.

14. The area of a rectangle is 30 square meters. Find the length and width if the length is 1.45 times the width.

15. From 1970 to 1990, the average cost of a new car, C, can be approximated by the model $C = 30.5t^2 + 4192$, where t is the number of years since 1970.

    a. What was the average cost of a car in 1987?

    b. During which year was the average cost of a new car $7242?