# 8.6 SOLVING EQUATIONS WITH RADICALS

### **Objectives**

- Solve radical equations by using the power rule.
- Solve radical equations that require additional steps.
- Solve radical equations with indexes greater than 2.
- Use the power rule to solve a formula for a specified variable.

# POWER RULE FOR SOLVING AN EQUATION WITH RADICALS

If both sides of an equation are raised to the same power, all solutions of the original equation are also solutions of the new equation.

$$Solve \sqrt{5x+1} = 4.$$

## SOLVING AN EQUATION WITH RADICALS

one radical term is alone on one side of the equation. \_\_\_\_\_. Raise each side of the equation to a power that is the same as the index of the radical. • \_\_\_\_\_the resulting equation. If it still contains a radical, repeat Steps 1 and 2. o \_\_\_\_\_ all proposed solutions in the original equation.

Solve 
$$\sqrt{3y+1}-4=0$$
.

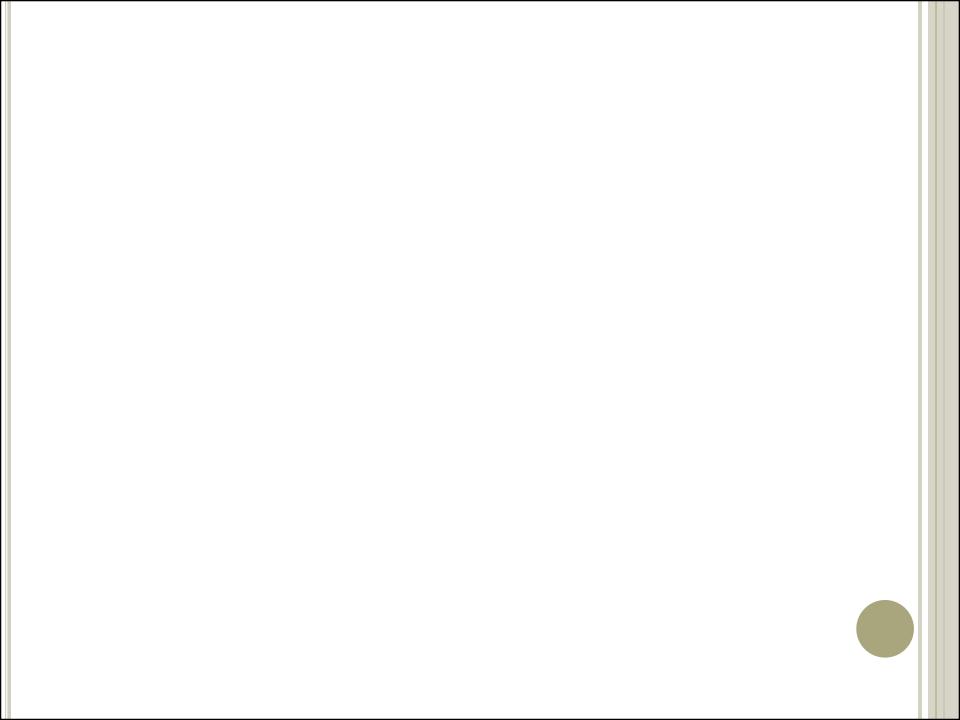
Solve 
$$\sqrt{5x-1} + 3 = 0$$
.

Solve 
$$\sqrt[4]{2x+5} = 2$$
.

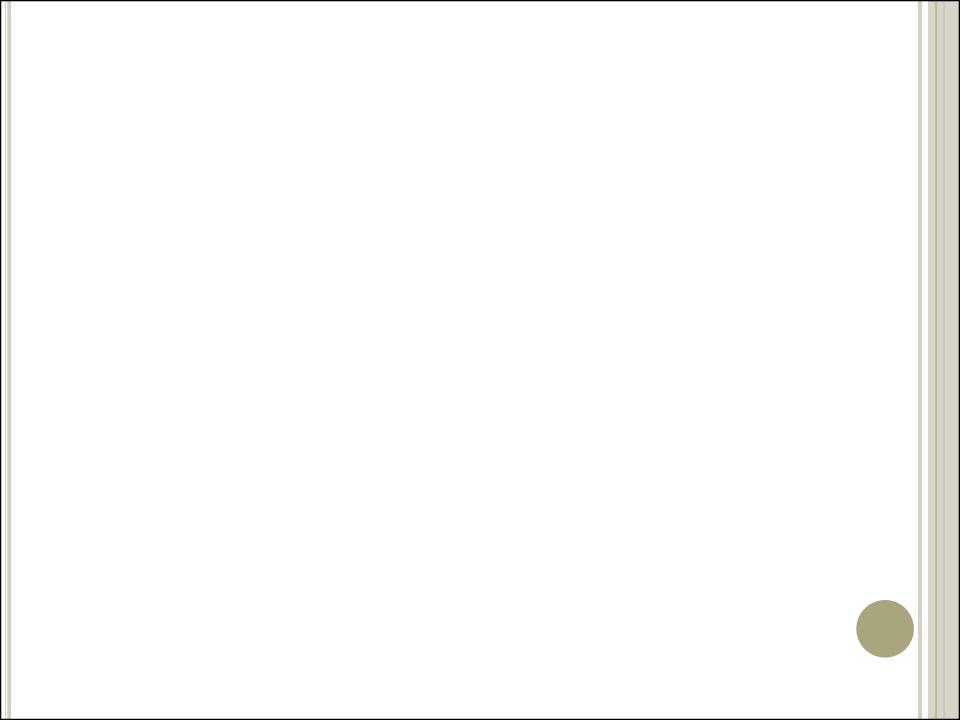
Solve 
$$\sqrt{5-x} = x + 1$$
.

Solve 
$$\sqrt{x^2 - 3x + 18} = x + 3$$
.

Solve 
$$\sqrt{2x+3} + \sqrt{x+1} = 1$$
.



Solve 
$$\sqrt{4x+5} - \sqrt{2x+2} = 1$$
.



Solve 
$$\sqrt[3]{4x-5} = \sqrt[3]{3x+2}$$
.

Solve the formula for R.

$$Z = \sqrt{\frac{R}{T}}$$

Solve the formula for a.

$$x = \sqrt{\frac{y+2}{a}}$$