Square Roots

1. What positive value of x makes the following equation true: $x^2 = 289$? Check your solution.

2. A square-shaped park has an area of $400\ yd^2$. What are the dimensions of the park? Write and solve an equation.

3. Find the positive value of x that makes the equation true: $x^2 = 441^{-1}$. Check your solution.

Square Roots

1. What positive value of x makes the following equation true: $x^2 = 289$? Check your solution.

$$x^2 = 289$$
$$\sqrt{x^2} = \sqrt{289}$$
$$x = \sqrt{289}$$
$$x = 17$$

Check:

$$17^2 = 289$$
$$289 = 289$$

2. A square-shaped park has an area of $400\ yd^2$. What are the dimensions of the park? Write and solve an equation.

$$x^2 = 400$$
$$\sqrt{x^2} = \sqrt{400}$$
$$x = \sqrt{400}$$
$$x = 20$$

Check:

$$20^2 = 400$$
$$400 = 400$$

3. Find the positive value of x that makes the equation true: $x^2 = 441^{-1}$. Check your solution.

$$x^2 = 441^{-1}$$
$$\sqrt{x^2} = \sqrt{441^{-1}}$$
$$x = \sqrt{441^{-1}}$$
$$x = \sqrt{\frac{1}{441}}$$
$$x = \frac{1}{21}$$
$$x = 21^{-1}$$

Check:

$$(21^{-1})^2 = 441^{-1}$$
$$21^{-2} = 441^{-1}$$
$$\frac{1}{21^2} = 441^{-1}$$
$$\frac{1}{441} = 441^{-1}$$
$$441^{-1} = 441^{-1}$$