Square Roots

1. Find the positive value of x that makes the equation true: $x^2 = 256^{-1}$.

2. Find the positive value of x that makes each equation true. Check your solution.

a) $x^2 = 225$

b) $x^2 = 361^{-1}$

Square Roots

1. Find the positive value of x that makes the equation true: $x^2 = 256^{-1}$.

$$x^2 = 256^{-1}$$
$$\sqrt{x^2} = \sqrt{256^{-1}}$$
$$x = \sqrt{256^{-1}}$$
$$x = \sqrt{\frac{1}{256}}$$
$$x = \frac{1}{16}$$
$$x = 16^{-1}$$

Check:

$$(16^{-1})^2 = 256^{-1}$$
$$16^{-2} = 256^{-1}$$
$$\frac{1}{16^2} = 256^{-1}$$
$$\frac{1}{256} = 256^{-1}$$
$$256^{-1} = 256^{-1}$$

2. Find the positive value of x that makes each equation true. Check your solution.

a) $x^2 = 225$

$$x^2 = 225$$
$$\sqrt{x^2} = \sqrt{225}$$
$$x = \sqrt{225}$$
$$x = 15$$

Check:

$$15^2 = 225$$
$$225 = 225$$

b) $x^2 = 361^{-1}$

$$x^2 = 361^{-1}$$
$$\sqrt{x^2} = \sqrt{361^{-1}}$$
$$x = \sqrt{361^{-1}}$$
$$x = \sqrt{\frac{1}{361}}$$
$$x = \frac{1}{19}$$
$$x = 19^{-1}$$

Check:

$$(19^{-1})^2 = 361^{-1}$$
$$19^{-2} = 361^{-1}$$
$$\frac{1}{19^2} = 361^{-1}$$
$$\frac{1}{361} = 361^{-1}$$
$$361^{-1} = 361^{-1}$$

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