

SOLVING POLYNOMIAL EQUATIONS

Frequency: ★

The degree of an equation tells you how many _____ you can find for that equation.

Perfect Squares and Perfect Cubes to Solve Equations

Save time when solving polynomial equations by knowing common perfect squares and perfect cubes.

Perfect squares		Perfect cubes
$1^2 =$	$7^2 =$	$1^3 =$
$2^2 =$	$8^2 =$	$2^3 =$
$3^2 =$	$9^2 =$	$3^3 =$
$4^2 =$	$10^2 =$	$4^3 =$
$5^2 =$	$11^2 =$	$5^3 =$
$6^2 =$	$12^2 =$	$6^3 =$

I. Solving by Isolating the Variable

Solve for x . $5x^2 = 45$

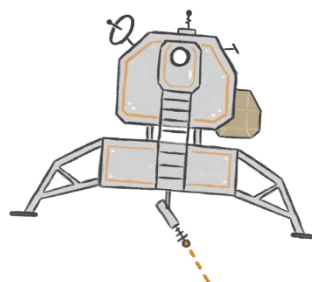
$x =$ or

Solve for x . $2x^3 + 7 = 23$

*Don't expect to need the imaginary solutions.

II. Solving by Factoring

Solve for x . $x^3 - 2x^2 = 3x$



$x =$, , or

III. Solving by Using the Quadratic Formula

Solve for x . $3x^2 + 4x = 1$

$$a = \quad , b = \quad , c = \quad$$

$$x = \frac{\pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

$$x = \frac{\pm \sqrt{\quad}}{\quad}$$

$x =$ or $x =$

← Set equal to 0.

← Identify a , b , and c .

← Substitute into the quadratic formula.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

← Simplify.