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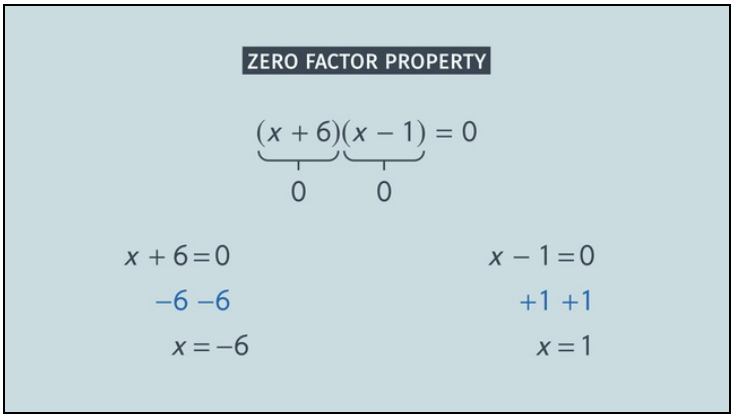
Solving Quadratic Equations by Factoring



1 **Check the factorization.**

2 **State the solutions of the equation** $(x+6)(x-1)=0$.

3 **Solve the quadratic equation.**

4 **Determine the solutions of the factorized equations.**

5 **Multiply the two binomials using the FOIL method.**

6 **Determine the code.**

\+ **with lots of tips, answer keys, and detailed answer explanations for all of the problems.**

Check the factorization.

Choose the correct term(s).

$$(x-2)(x+3) =$$

- [ ] **A** $x^2 + 3x - 2x - 6$
- [ ] **B** $x^2 - 3x + 2x - 6$
- [ ] **C** $x^2 - 6$
- [ ] **D** $x^2 - 6x + 2$
- [ ] **E** $x^2 + x - 6$
- [ ] **F** $x^2 - x - 6$

Hints for solving these problems

1 of 6

Check the factorization.

Hint #1

FOIL is a mnemonic device for multiplying binomials:

- **F**irst
- **O**uter
- **I**nner
- **L**ast

Hint #2

$$\begin{aligned}(x+1)(x+2) &= x^2+2x+x+2\\ &= x^2+3x+2\end{aligned}$$

Here you see an example for using FOIL.

$2x$ and x are like terms and can be combined to get $2x+x=3x$.

Hint #3

Two terms are correct.

Answers and detailed answer explanations for these problems

1 of 6

Check the factorization.

Answer key: A, E

$$(x-2)(x+3)$$

FOIL is a mnemonic device for multiplying binomials. The letters stand for

- **F**irst
- **O**uter
- **I**nner
- **L**ast

Let's have a look at the example beside.

- **F**: $x \times x = x^2$
- **O**: $x \times 3 = 3x$
- **I**: $-2 \times x = -2x$
- **L**: $-2 \times 3 = -6$

Adding these terms leads to

$$x^2 + 3x - 2x - 6$$

and combing the like terms gives

$$x^2 + x - 6.$$

So we have together

$$x^2 + x - 6 = (x-2)(x+3).$$