



# Quadratic Zeros

Let's explore zeros on a graph.

## 10.1

## Which Three Go Together: Factored Quadratics

Which three go together? Why do they go together?

- A.  $(x + 3)^2$
- B.  $(x + 3)(x - 3)$
- C.  $(x - 3)(x - 3)$
- D.  $x^2 + 6x + 12$

## 10.2

## Finding Solutions by Graphing

1. Use technology to graph the functions, then find the zeros.

a.  $f(x) = (x + 2)(x - 5)$

b.  $g(x) = (5x - 4)(x - 3)$

c.  $h(x) = x^2 + 5x + 4$

d.  $k(x) = x^2 + 5x + 3$

e.  $m(x) = 2x^2 - 13x - 15$

f.  $n(x) = 2x^2 - 13x - 10$



2. For each function, write an equation that would be solved by the zeros. Are the solutions exact or approximate?

### 10.3

## Matching More Factored Expressions

Take turns with your partner to match an expression in factored form with a function in standard form.

- For each match that you find, explain to your partner how you know it's a match.
- For each match that your partner finds, listen carefully to their explanation. If you disagree, discuss your thinking and work to reach an agreement.

Expressions in factored form

1.  $(2a + 5)(a + 4)$
2.  $(3a - 1)(a - 10)$
3.  $(a + 7)(5a - 2)$
4.  $(4a - 5)(4a - 5)$
5.  $(4a - 5)(4a + 5)$
6.  $(2a + 7)(9a + 4)$

Functions in standard form

- $f(x) = 2a^2 + 13a + 20$
- $g(x) = 16a^2 - 25$
- $h(x) = 5a^2 + 33a - 14$
- $j(x) = 16a^2 - 40a + 25$
- $k(x) = 18a^2 + 71a + 28$
- $m(x) = 3a^2 - 31a + 10$

