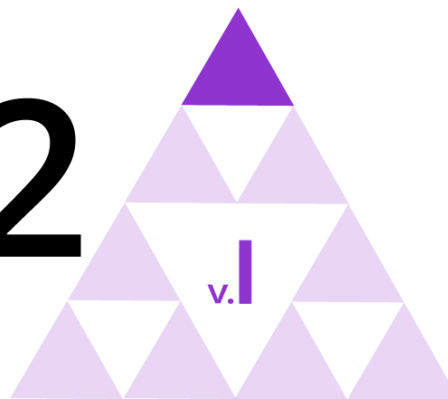


IM 9–12 MATH



Unit 2

Polynomials and Rational Functions

ALGEBRA 2

Lesson 5

Connecting Factors and Zeros

Learning Goal

Let's investigate polynomials written in factored form.

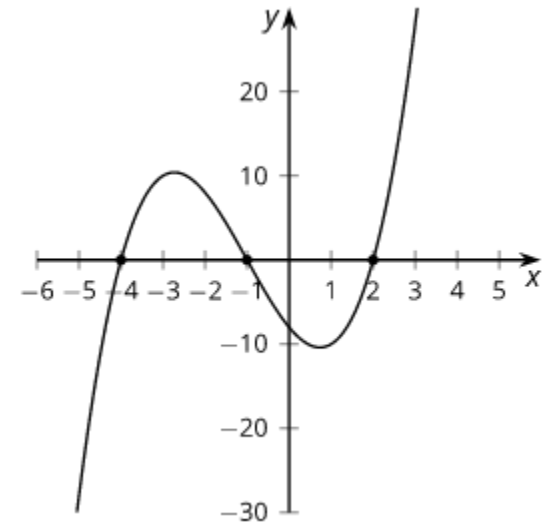
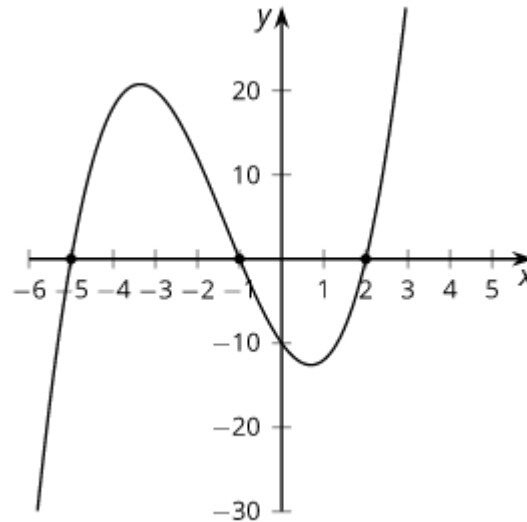
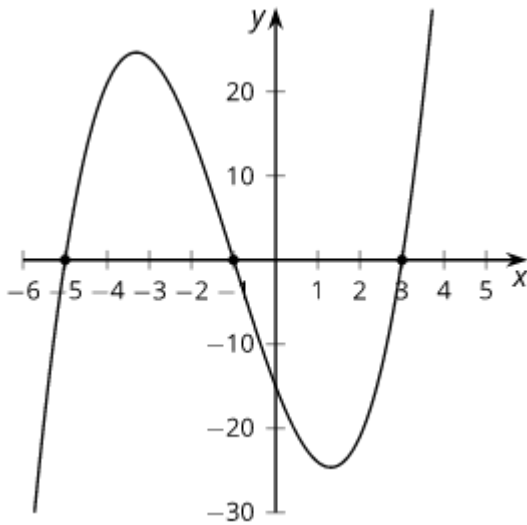
Algebra 2

Factored Form



Warm-up: Notice and Wonder

What do you notice? What do you wonder?



What Values of x Make These Equations True?



Find all values of x that make the equation true.

1. $(x + 4)(x + 2)(x - 1) = 0$

2. $(x + 4)(x + 2)(x - 1)(x - 3) = 0$

3. $(x + 4)^2(x + 2)^2 = 0$

4. $-2(x - 4)(x - 2)(x + 1)(x + 3) = 0$

5. $(2x + 8)(7x - 3)(x - 10) = 0$

6. $x^2 + 3x - 4 = 0$

7. $x(3 - x)(x - 1)(x + 0.75) = 0$

8. $(x - 4)(x + 9) = 0$

Factors, Intercepts, and Graphs



Your teacher will give you a set of cards. Match each equation to either a graph or a description.

Take turns with your partner to match an equation with a graph or a description of a graph.

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



$$V(x) = (11 - 2x)(8.5 - 2x)(x)$$

Write a short explanation to another student who is not in the class about how to identify what values of x make $V(x) = 0$.

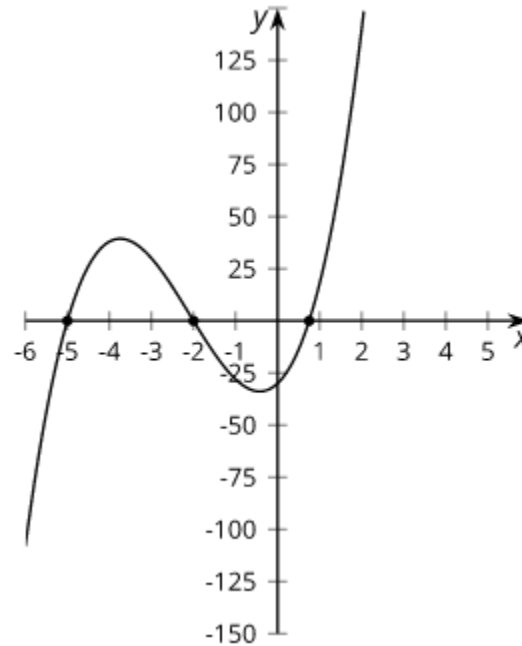
I can find the zeros of a function from its factored form.

Learning Targets

Algebra 2



1. The polynomial $y = (x - 5)(x - 2)(4x + 3)$ has been graphed incorrectly. Identify the error and how to fix the graph.





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