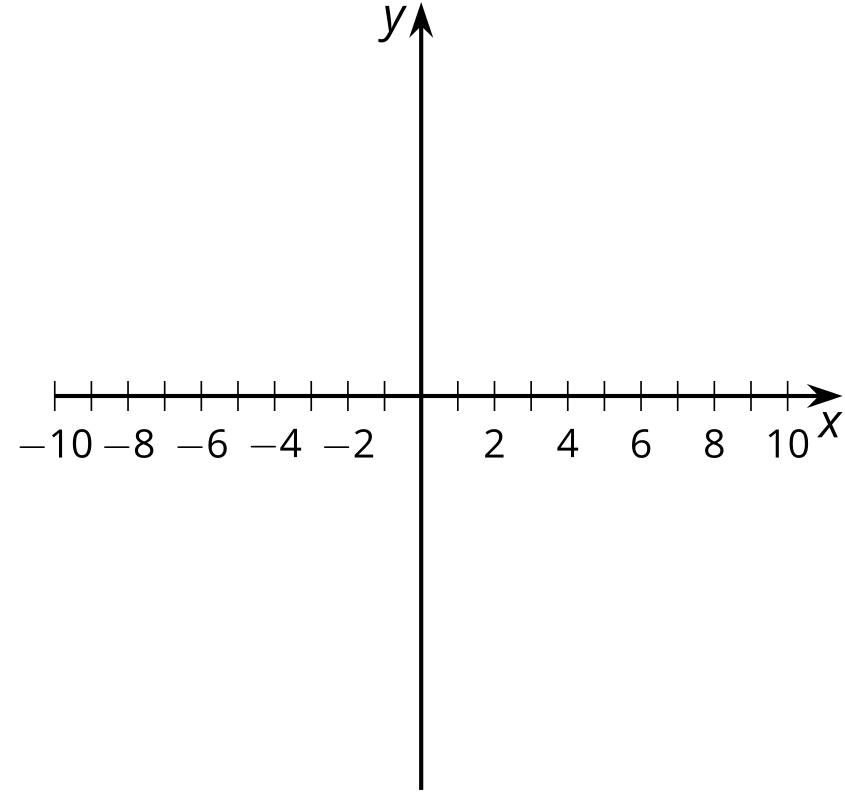
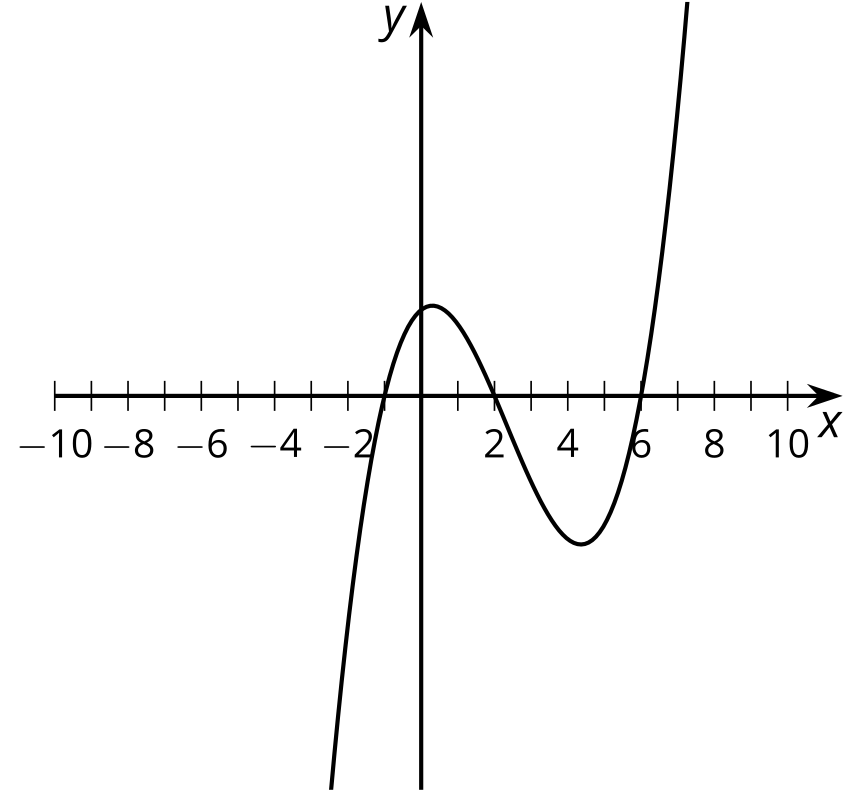
### Lesson 14 Practice Problems

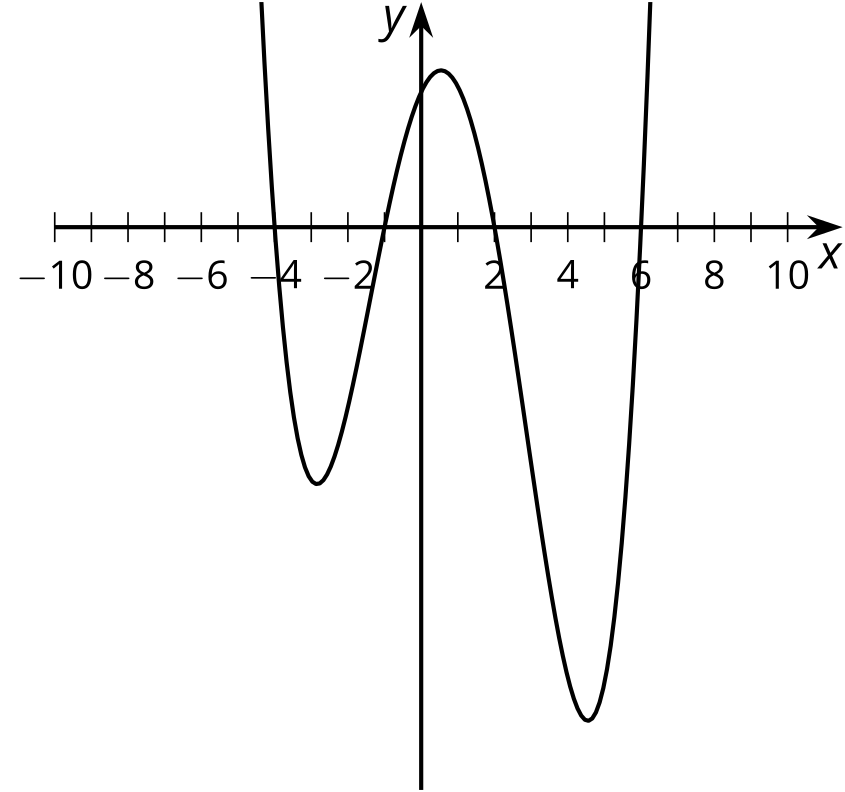
1. We know these things about a polynomial function, : it has exactly one relative maximum and one relative minimum, it has exactly three zeros, and it has a known factor of . Sketch a graph of  given this information.

* 

1. Mai graphs a polynomial function, , that has three linear factors , , and . But she makes a mistake. What is her mistake?

* 

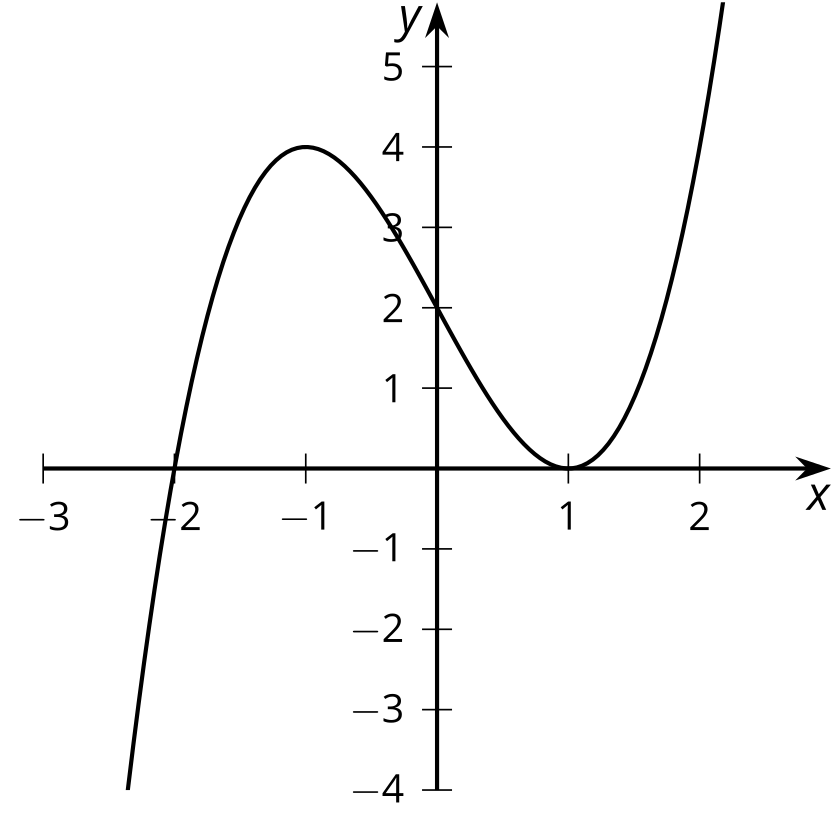
1. Here is the graph of a polynomial function with degree 4.

* Select **all** of the statements that are true about the function.
* 
  1. The leading coefficient is positive.
  2. The constant term is negative.
  3. It has 2 relative maximums.
  4. It has 4 linear factors.
  5. One of the factors is .
  6. One of the zeros is .
  7. There is a relative minimum between and .

1. State the degree and end behavior of . Explain or show your reasoning.

* (From Unit 2, Lesson 9.)

1. Is this the graph of or ? Explain how you know.

* 
* (From Unit 2, Lesson 10.)

1. Kiran thinks he knows one of the linear factors of . After finding that , Kiran suspects that is a factor of , so he sets up a diagram to check. Here is the diagram he made to check his reasoning, but he set it up incorrectly. What went wrong?



|  |  |  | * -5 |
| --- | --- | --- | --- |
|  |  |  |  |
| * 3 |  |  | * 15 |

* (From Unit 2, Lesson 12.)

1. The polynomial function has a known factor of . Rewrite as a product of linear factors.

* (From Unit 2, Lesson 13.)



© CC BY 2019 by Illustrative Mathematics®