## Unit 2 Lesson 7: Using Factors and Zeros

### 1 More Than Factors (Warm up)

#### Student Task Statement

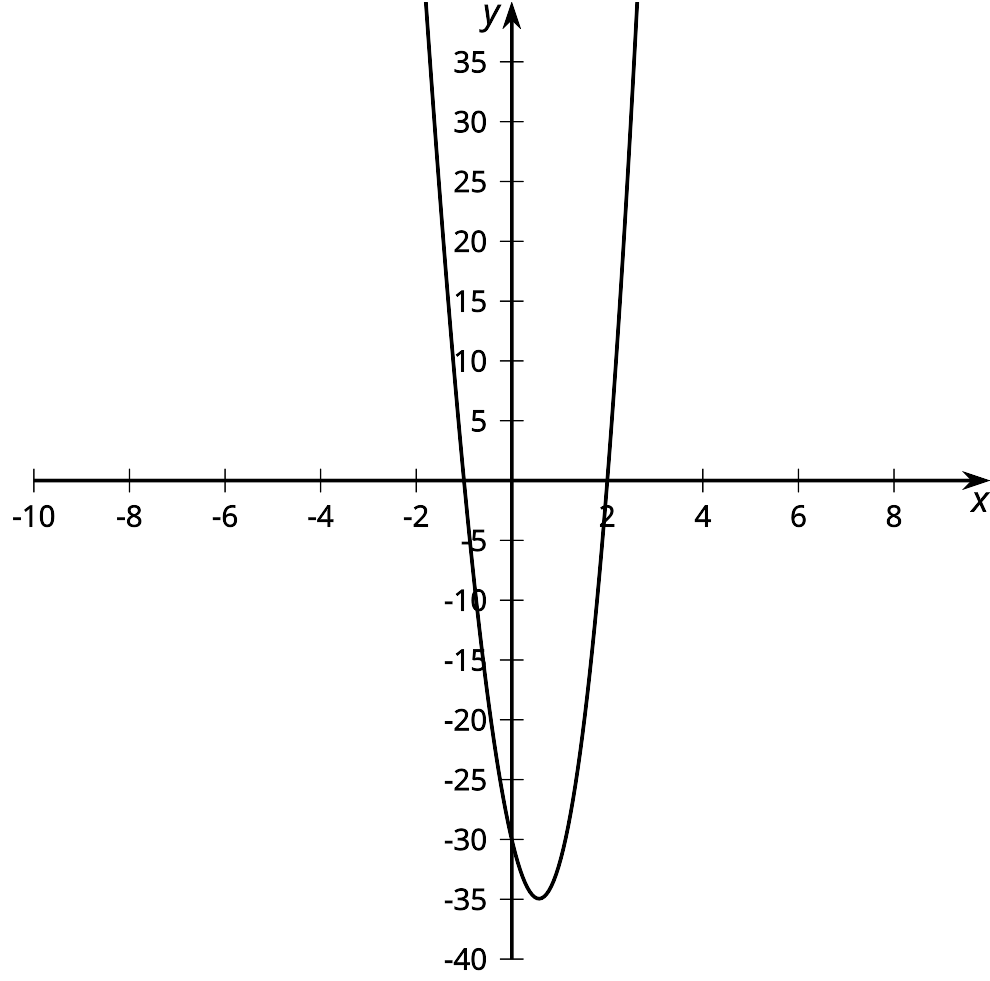
and are both polynomial functions of where  and .

1. How are the two functions alike? How are they different?
2. If a graphing window of and shows all intercepts of a graph of , what graphing window would show all intercepts of ?

### 2 Choosing Windows

#### Student Task Statement

Mai graphs the function given by and sees this graph.



She says, “This graph looks like a parabola, so it must be a quadratic.”

1. Is Mai correct? Use graphing technology to check.
2. Explain how you could select a viewing window before graphing an expression like that would show the main features of a graph.
3. Using your explanation, what viewing window would you choose for graphing ?

### 3 What’s the Equation?

#### Student Task Statement

Write a possible equation for a polynomial whose graph has the following horizontal intercepts. Check your equation using graphing technology.

1. and
2. , and
3. , and
4. , , and



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