

## Factoring Polynomials: Part 1



"I can state the Remainder Theorem and the Factor Theorem. I can always apply them, when applicable. I can apply what I have learned in familiar and unfamiliar settings."

### Activity

In a group, using small response boards:

Given:  $p(x) = x^3 + 2x^2 - 5x - 6$

1. Evaluate:  $p(-2)$  and  $p(1)$
2. Divide  $p(x)$  by  $x + 2$
3. Divide  $p(x)$  by  $x - 1$
4. Describe what you have learned.

### The Remainder Theorem

#### Recall: The Division Statement

### The Factor Theorem

#### Example

Factor fully (over the rationals), if possible:

$$x^3 - 6x^2 - x + 30$$