Unit 2 Lesson 3: Introducing Polynomials

1 Which One Doesn't Belong: What are Polynomials? (Warm up)

Student Task Statement

Which one doesn't belong?

A: $4 - x^2 + x^3 - 4x$

B: $2x^4 + x^2 - 5.7x + 2$

C: $x^2 + 7x - x^{\frac{1}{3}} + 2$

D: $x^5 + 8.36x^3 - 2.4x^2 + 0.32x$

2 Card Sort: Equations and Graphs

Student Task Statement

Your teacher will give you a set of cards. Group them into pairs that represent the same polynomial function. Be prepared to explain your reasoning.

3 Let's Make Some Curves

Student Task Statement

Use graphing technology to write equations for polynomial functions whose graphs have the characteristics listed when plotted on the coordinate plane.

1. A 1st degree polynomial function whose graph intercepts the vertical axis at 8.

2. A 2nd degree polynomial function whose graph has only positive y-values.

3. A 2nd degree polynomial function whose graph contains the point $(0, -9)$.

4. A 3rd degree polynomial function whose graph crosses the horizontal axis more than once.

5. A 4th degree or higher polynomial function whose graph never crosses the horizontal axis.