## 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.



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