

**Polynomial and other
Algebraic Expressions — R.4**

Polynomials

A polynomial in x is a sum of the form

$$a_n x^n + a_{n-1} x^{n-1} + a_{n-2} x^{n-2} + \dots + a_1 x + a_0$$

Where n is a nonnegative integer and each coefficient a_k is a real number. If the leading coefficient $a_n \neq 0$, then the polynomial is said to have degree n .

Example

$$3x^4 + 7x - 1$$

degree:

leading coefficient:

Express as a polynomial or simplify and state why the answer isn't a polynomial.

1. $(6x^3 - 2x^2 + x - 2) - (8x^2 - x + 2)$

2. $(2x + 7)(x^3 - 4x^2 + 1)$

3. $(2\sqrt{x} - 2\sqrt{y})^2$

4. $(2y^{1/3} + x^{2/3})^3$

5. $\frac{6x^2 y z^3 - x y^2 z}{2xyz}$

Homework:
(do after section covered in lecture)
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