

## KEY CONCEPTS

- A polynomial expression has the form  
$$a_n x^n + a_{n-1} x^{n-1} + a_{n-2} x^{n-2} + \dots + a_3 x^3 + a_2 x^2 + a_1 x + a_0$$
where
  - $n$  is a whole number
  - $x$  is a variable
  - the coefficients  $a_0, a_1, \dots, a_n$  are real numbers
  - the degree of the function is  $n$ , the exponent of the greatest power of  $x$
  - $a_n$ , the coefficient of the greatest power of  $x$ , is the leading coefficient
  - $a_0$ , the term without a variable, is the constant term
- A polynomial function has the form  
$$f(x) = a_n x^n + a_{n-1} x^{n-1} + a_{n-2} x^{n-2} + \dots + a_2 x^2 + a_1 x + a_0$$
- A power function is a polynomial of the form  $y = ax^n$ , where  $n$  is a whole number.
- Power functions have similar characteristics depending on whether their degree is even or odd.
- Even-degree power functions have line symmetry in the  $y$ -axis,  $x = 0$ .
- Odd-degree power functions have point symmetry about the origin,  $(0, 0)$ .

Communicate your understanding: pg 11, C1, C2, C3, C4

Homework: pg 12; 2, 3, 5 - 12, 14 - 19