Practice Exercises

A. Determine which of the following are polynomial functions.

1. $f(x) = 2x - 1$

2. $h(x) = 4^x - 7$

3. $F(x) = 7 + 5x^{-2} + 4x^5$

4. $f(x) = -x^5 + 7x^2 - 4 + x^{\frac{1}{2}}$

5. $h(x) = \dfrac{5 + x^3}{7}$

B. Determine the kind of function, the degree, the leading coefficient, and the constant term.

1. $P(x) = -4x^3 - 15x + 6 + 7x^5$

2. $G(x) = 3x^4 - 5x^6 + 8x^2 - 4x^3$

3. $f(x) = 9 - 3x^2 - 3x + 6x^4$

4. $h(x) = x(2x - 3)^2$

5. $F(x) = \dfrac{2x - 5x^5 + 7x}{3}$

Problem Set

A. Determine which of the following are polynomial functions.

1. $f(x) = 3x^2 + 5$
2. $h(x) = 5x^3 + x - 3$
3. $F(x) = \dfrac{3x^2}{2x^3}$
4. $f(x) = 6x(x^2 - 1)$
5. $h(x) = \sqrt{x^7 + 3x^6 - 4x}$

B. Determine the kind of function, the degree, the leading coefficient, and the constant term.

1. $P(x) = -11 + x^4 - 3x^2$

2. $G(x) = \frac{1}{2}x^2 + 4x^3 + 5$

3. $f(x) = 5\sqrt{3}x - 7 + 2x^2$

4. $h(x) = 7.5x^{10} - 3x^4 + 11x^8$

5. $F(x) = x(5x^3 + 7)$

Problem Set

A.

1. Polynomial
2. Polynomial
3. Not Polynomial
4. Polynomial
5. Not Polynomial

B.

1. $P(x) = x^4 - 3x^2 - 11$

   Degree=4

   Kind: Quartic function

   LC= 1

   Constant= -11

2. $G(x) = 4x^3 + \frac{1}{2}x^2 + 5$

   Degree= 3

   Kind: Cubic function

   LC= 4

   Constant= 5

3. $f(x) = 2x^2 + 5\sqrt{3}x - 7$

   Degree= 2

Kind: Quadratic function
LC= 2
Constant= -7

4. $h(x) = 7.5x^{10} + 11x^8 - 3x^4$
Degree= 10
Kind: 10^{th} degree polynomial function
LC= 7.5
Constant= 0

5. $F(x) = 5x^4 + 7x$
Degree= 4
Kind: Quartic function
LC= 5
Constant= 0