

## 4.1 Practice

For each polynomial, state its:

a) leading coefficient

b) type by degree

c) type by number of terms

1)  $n^5 + 6n^4 - 10n^3 - 5n$

a)

b)

c)

2)  $-3b^4$

a)

b)

c)

3)  $-x^2 + 8x - 4$

a)

b)

c)

4)  $10x^6 - 10x^5 + x^2$

a)

b)

c)

5)  $9n^4 + n^2 + 9n + 2$

a)

b)

c)

6) 7

a)

b)

c)

7)  $-6p - 1$

a)

b)

c)

8)  $\frac{1}{2}p^3$

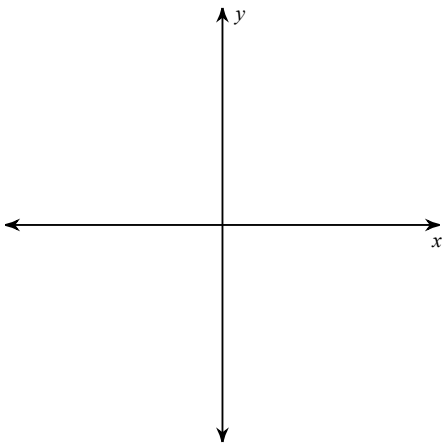
a)

b)

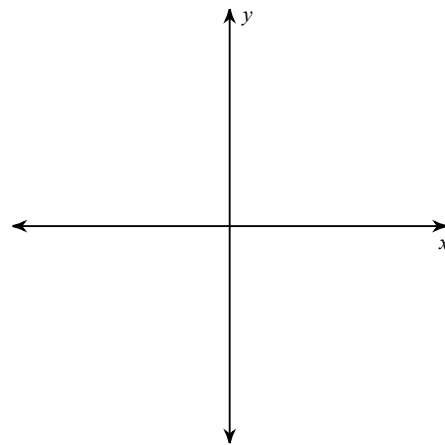
c)

**Sketch the general shape of each function. Then state the end behavior.**

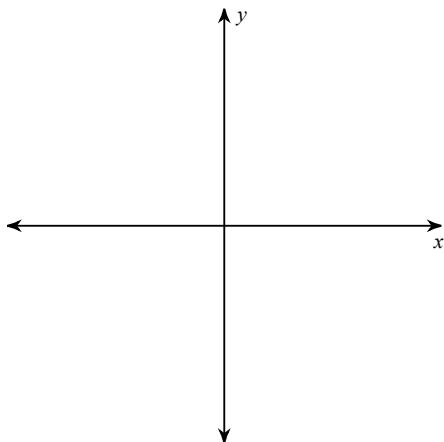
9)  $y = 7x^3 + 8x^2 - 1$



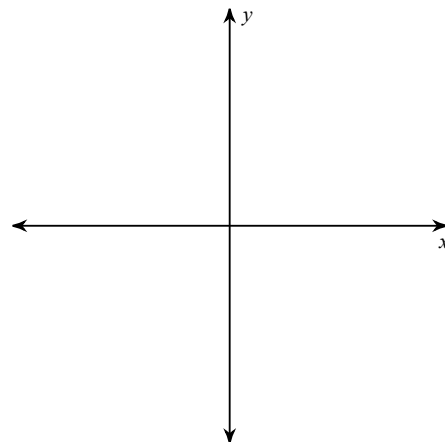
10)  $y = -6x^{18} + 5x^{12} + 3x^7 - 2$



11)  $y = 9x^{14} + 6x^7 + 5x^3 - 1$



12)  $y = -3x^{19} - 4x^{14} + 5x^8 + 3x^2$



**Evaluate each function at the given value.**

13)  $f(x) = x^6 + 8x^5 + 15x^4 - 2x^3 - 5x^2 + 25x - 7$  at  $x = -5$

14)  $f(a) = a^5 + a^4 + 3a^3 + 10a^2 + 5a + 15$  at  $a = -2$

15)  $f(n) = n^4 - 4n^3 + 5n^2 - 20n - 5$  at  $n = 4$

16)  $f(a) = 3a^3 + 9a^2 + 7a + 11$  at  $a = -2$