**Examples for Adding and Subtracting Polynomials**

**Simplify by combining like terms**

1. -5x2y3 + 7xy – 10x2y – 8 + 4xy – 6y3x2
2. 7abcdefghijklmnop – 21 - 3abcdefghijklmnop - 4abcdefghijklmnop
3. (-3x3 – 5x + 10x2) + (-5x4 + 8x – 7x2)
4. (4r4 – 3r3) + (5r4 + 45rt2 -34rt2) + (10r5)
5. (-2y3 – 6by + 10y5) - (-4y4 + 10by – 7y5)
6. (-4a2- 3a – 2) – (-2a2- 3a + 1)

**Examples for Multiplying a Monomial by a Polynomial**

Expand and Simplify

1. 2x(2x+4x+3x3 + 2)
2. 2(h2 – h + 5) - 6h(5h – 7)
3. -2a(a2- 5a +1) + a2(-3a + 8)
4. x2y2(3 + 2x) + x2y(y – 16) – y(2x)2
5. The perimeter of the triangle is 7x + 12. Find an expression for the missing side.

2x - 4

 3x + 1

**Examples for Distributive Law and Multiplying a Monomial by a Monomial**

Expand and Simplify if necessary

1. 5(4x+5x2 – 7)
2. -3(x3 – 7x + 10) – 2(x2 – 2x – 4)
3. 2x (2y)

1. 4x2yz(-2xy2z)
2. 4x6 (6x) -5(x7y)
3. (5mn)(2mn2p3)

**Powers of Monomials –** Examples

1. (4x2)3
2. **(**5ab2c6)6
3. **[(**t4)3(t3)5]6
4. Find the volume of a sphere with the radius of r = a2b4c3. The equation for the volume of a sphere is $V=4/3πr^{3}$

**Examples for Algebra Terminology**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Polynomial** | **2y4** | **4z10-2t4g7** | **-4x3 + 7 –8x + 2x3** | **16x4y – 8xyz3 + 5x2y3** |
| **Type** |  |  |  |  |
| **Degree** |  |  |  |  |
| **Coefficient(s)** |  |  |  |  |
| **Variable(s)** |  |  |  |  |
| **Constant Term** |  |  |  |  |