

10.1 Add and Subtract Polynomials

Monomial:

Degree of a monomial:

Polynomial:

Standard Form:

Coefficient of the first term is called the leading coefficient.

Degree of Polynomial:

Put in standard form, identify degree and leading coefficient of polynomial:

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

Polynomial names

Monomial -

Binomial -

Trinomial -

Adding Polynomials - just add like terms

$$(5x^3 - 3x + 2) + (3x^3 + 2x^2 + 5x)$$

Subtracting Polynomials - distribute a -1 then add like terms.

$$(6x^5 - 3x) - (-4x^5 + 2x - 5)$$

$$(5x^3 - 2x + 1) - (2x^2 + 4x) + (x^3 + 5x^2 - 8x)$$

Try These

$$1) (4m^2 - m + 2) + (-3m^2 + 10m + 7) \quad 2) (-n^2 + 2n) - (2n^3 - n^2 + n + 12)$$

Summary:

10.1 Bookwork

Directions 1-3: Put each polynomial into standard form and find the degree.

1) $5x^2 - 4x^3 + 5$

2) $10x^6 - 13x^7$

3) $6 - 4g^2 + 7g + 5g^3$

Directions 4-10: Find each sum or difference.

4) $(5a^2 - 3) + (8a^2 - 1)$

5) $(7k^2 + 2k - 6) + (3k^2 - 11k - 8)$

6) $(4m^2 - m + 2) + (-3m^2 + 10m + 7)$

7) $(6c^2 + 3c + 9) - (3c - 5)$

8) $(-n^2 + 2n) - (2n^3 - n^2 + n + 12)$

9) $(9b^3 - 13b^2 + b) - (-13b^2 - 5b + 14)$

10) $(9p^2 - 6p + 3 - 11p) + (7p^3 - 3p^2 + 4) - (5p^2 - p^3 + 10)$

11) Describe and correct the error below:

$$\begin{aligned} &(6x^2 - 5x) - (2x^2 + 3x - 2) \\ &6x^2 - 5x - 2x^2 + 3x - 2 \\ &4x^2 - 2x - 2 \end{aligned}$$

Quick Review. Simplify each.

1) $\frac{b^7}{bb^3}$

2) $(3xy^4)^3$

3) $x^{-6}y^4$

4) $\frac{b^5}{b^{11}}$

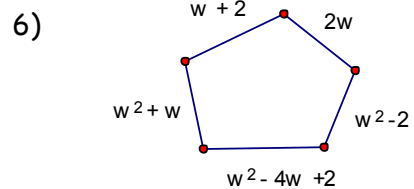
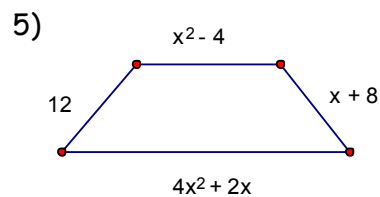
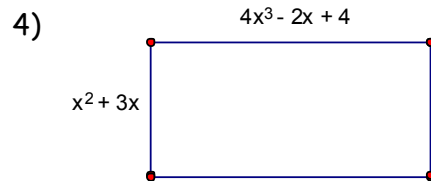
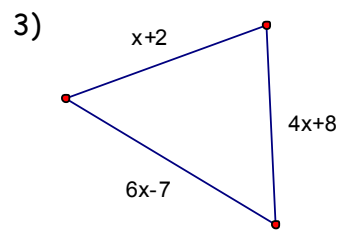
10-1 APPLICATION

Directions: Simplify each expression:

1) $(7x^3 - 5x^4 - 7x) - (6x^4 + x^3 - 4x)$

2) $(4 - 7v^3 - 3v - 7v^2) + (3v^4 + 7v^2 + 6v^3 + 1)$

Directions: Write a polynomial that represents the perimeter of the figure.



7)

a) Complete the table below for $f(x) = (x^2 - 2x) + (2x^2 + 4x)$.

X	f(x)
-2	
-1	
0	
1	
2	

X	g(x)
-2	
-1	
0	
1	
2	

b) Complete the table above for $g(x) = 3x^2 + 2x$.

c) Based off the tables what conclusion can you make about $f(x)$ and $g(x)$?

d) Complete the table below for $h(x) = (x^3 + x + 1) - (5x^3 - 2x + 7)$ and $j(x) = -4x^3 - x - 6$.

x	h(x)	j(x)
-2		
-1		
0		
2		

e) Are the functions equal to each other? How can you tell by looking at the table? If they are not, what should $j(x)$ be changed to so that it is equal to $h(x)$?

Coming Up...

Simplify

1. $\sqrt{5^2 - 4(2)(2)}$

Simplify

2. $-5 + \sqrt{5^2 - 4(2)(2)}$

Simplify

3. $\frac{-5 + \sqrt{5^2 - 4(2)(2)}}{2(2)}$