Adding & Subtracting Polynomials Review

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Mathematics 9
Polynomials
Adding & Subtracting Polynomials Review

A. Examples

1. For each of the following identify the number of terms and whether the expression is a monomial, binomial, trinomial or polynomial. Then determine the degree of the polynomial.

a) $4xy+3$

2 terms
binomial
2nd degree.

b) $5x^2y-6x^2+2xy-7$

4 terms
Polynomial
3rd degree

c) 8

1 term
monomial
0 degree

2. Simplify the following and state the degree of the polynomial.

a) $4x-2x+3-6$

$2x-3$
1st degree

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

$3x^2-x-6$
2nd degree.

c) $(2m^2-5m^2n)+(2m^2-3m^2n)$

$2m^2-5m^2n+2m^2-3m^2n$
$4m^2-8m^2n$
3rd degree

d) $(3x^2-x)-(6x^2-7x)$

$3x^2-x-6x^2+7x$
$-3x^2+6x$
2nd degree

e) $(3m^4 - 5m^2 + 2) + (2m^4 - m^2 - 4)$

$3m^4 - 5m^2 + 2 + 2m^4 - m^2 - 4$

$5m^4 - 6m^2 - 2$

4th degree

f) $(5y^2 + 3x^2 - z^2) - (-2x^2 + 3y^2 - 4z^2)$

$5y^2 + 3x^2 - z^2 + 2x^2 - 3y^2 + 4z^2$

$2y^2 + 5x^2 + 3z^2$

$5x^2 + 2y^2 + 3z^2$

2nd degree

g) $(4m^2 + 6mn^2 + 8) + (3mn^2 - m^2 + 4) - (2m^2 - 5mn^2 + 6)$

$4m^2 + 6mn^2 + 8 + 3mn^2 - m^2 + 4 - 2m^2 + 5mn^2 - 6$

$m^2 + 14mn^2 + 6$

3rd degree

h) $(4a^2 + 6b^2c^2 + 8d) + (3b^2c^2 - a^2 - 5d) - (2a^2 - 5b^2c^2 + 3d)$

$4a^2 + 6b^2c^2 + 8d + 3b^2c^2 - a^2 - 5d - 2a^2 + 5b^2c^2 - 3d$

$a^2 + 14b^2c^2$

4th degree.

Assignment: Adding & Subtracting Polynomials Review Assignment

Name:_____

Adding & Subtracting Polynomials Review Assignment

1. Simplify the following and state the degree of the polynomial.

a) $4x + 3y - 6x - 2y$

b) $4a - 3ab + 6abc - 5ab + 6a - 6abc$

c) $(4x + 3) - (7 - 3x)$

d) $\left(7x^2 - 3y^2\right) + \left(9x^2 + 4y^2\right)$

e) $\left(4n + n^2 - 3\right) - \left(2 + 6n - 3n^2\right)$

f) $(5a + 4) - (5a + 3)$

g) $\left(3x^4 - 3x\right) - \left(3x - 3x^4\right)$

h) $\left(-4m^4 + 14 + 3m^2\right) + \left(-3m^4 - 14m^2 - 8\right)$

i) $9c^3 + 5c^2 + 11c - 2c^3 + 9c - 8c^2$

j) $\left(k^4 - 3 - 3k^3\right) - \left(5k^4 - 6k^3 + 8k^5\right)$

k) $\left(3c^3 + 9c^2 - 4\right) + \left(7c^2 - 6\right) - \left(2c^3 + 5c^2\right)$

l) $\left(3k - 9k^4\right) - \left(8k + 7k^4\right) + \left(5k + 2k^2 + 4k^4\right)$

m) $\left(7h^2 + 2h^4\right) - \left(9h^2 - 5h^3\right) + \left(4h^3 + 6h^4\right)$

n) $\left(7y - 9 - 4y^3\right) + \left(5y^3 + 6 + 3y^5\right)$

o) $\left(3m^2n + 2mn - 5\right) - \left(4mn + 2m^2n - 3\right)$

p) $\left(5x^2 + 2xyz\right) + (8xyz - 4) - \left(3x^2 + 6\right)$

Answers

1. a) $-2x+y$, 1st degree
   b) $10a-8ab$, 2nd degree
   c) $7x-4$, 1st degree
   d) $16x^2+y^2$, 2nd degree
   e) $4n^2-2n-5$, 2nd degree
   f) 1, 0 degree
   g) $6x^4-6x$, 4th degree
   h) $-7m^4-11m^2+6$, 4th degree
   i) $7c^3-3c^2+20c$, 3rd degree
   j) $-8k^5-4k^4+3k^3-3$, 5th degree
   k) c^3+11c^2-10, 3rd degree
   l) $-12k^4+2k^2$, 4th degree
   m) $8h^4+9h^3-2h^2$, 4th degree
   n) $3y^5+y^3+7y-3$, 5th degree
   o) $m^2n-2mn-2$, 3rd degree
   p) $2x^2+10xyz-10$, 3rd degree