

2.1 Operations with Polynomials

9/13/19

Addition:

Ex 1: $(3x^3 + 3x^2 + 5) + (7x^3 - 2x^2 + 4)$
 $3x^3 + 3x^2 + 5 + 7x^3 - 2x^2 + 4$
 $10x^3 + 1x^2 + 9$

Ex 2: $(7m^3 - 3m^2) + (4 + 5m^2 - 9m)$
 $7m^3 - 3m^2 + 4 + 5m^2 - 9m$
 $7m^3 + 2m^2 + 4 - 9m$

Subtraction:

Ex 3: $(9k^5 - 6k + 8) - (8k^5 - 7k + 3)$
 $9k^5 - 6k + 8 - 8k^5 + 7k - 3$
 $1k^5 + 1k + 5$

Ex 4: $(10xy - 7x^2y + 8xy^2) - (6x^2y - 13xy + 14xy^2)$
 $10xy - 7x^2y + 8xy^2 - 6x^2y + 13xy - 14xy^2$
 $23xy - 13x^2y - 6xy^2$

Multiplication

Ex 5: $5x(3x^2 + 7x - 4)$
 $15x^3 + 35x^2 - 20x$

Ex 6: $(3x + 4)(5x + 2)$

	$3x$	$+4$
$5x$	$15x^2$	$+20x$
$+2$	$+6x$	$+8$

$15x^2 + 20x + 6x + 8 = 15x^2 + 26x + 8$

Ex 7: $(5x - 3)^2$
 $= (5x - 3)(5x - 3)$

	$5x$	-3
$5x$	$25x^2$	$-15x$
-3	$-15x$	$+9$

$25x^2 - 15x - 15x + 9$
 $25x^2 - 30x + 9$

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

	$3x^2$	$+5x$	-1
x	$3x^3$	$+5x^2$	$-1x$
$+3$	$+9x^2$	$+15x$	-3

$3x^3 + 5x^2 - 1x + 9x^2 + 15x - 3$
 $3x^3 + 14x^2 + 14x - 3$