Polynomial Study Guide

Naming Polynomials by degree and number of terms

Degree		
1		
2		
3		
4		

Number of Terms		
1		
2		
3		
4		

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

A1 9.1 wks #1-6

Adding & Subtracting Polynomials

1. Distribute the negative sign
2. Combine Like Terms

$(x^2+15x+13)+(3x^2-15x+7)$	$(x^2+3x)-(x^2+6-4x)$	$(2x+3)-(x-4)+(x+2)$

A1 9.1 wks #19-37 odd

Multiplying Polynomials

1. Distribute each term (multiplying the coefficients & adding exponents of like variables)

2a(6a-3b+ 5)	(3a-4)(a+5)	(x+2)(x-2)	$(y-1)(y^2+3y+5)$

A1 9.2 wks #1-11 odd
A1 9.3 wks #1-20 even
A1 9.4 wks #1-11 odd

Factoring the GCF

1. Divide each term by the GCF

7x-14	$15x + 45x^2$	$4n^4+6n^3-8n^2$	$6c^2 - 3c$

A1 9.2 wks #28-40 even

Factoring Polynomials (x^2+bx+c)

1. Find two numbers that multiply to c and add to b.

$x^2+16x+28$	n^2-n-6	$x^2+7x-18$

A1 9.5 wks #60-80 even

Factoring Polynomials (ax^2+bx+c)

1. Make a box
2. Put the first term in the upper right
3. Put the last term in the lower left
4. Find two numbers that multiply to ac and add to b (put them in the blank spaces)
5. Factor each row & each column

$7n^2+9n+2$	$4x^2+17x-15$	$2x^2-x-21$

A1 9.6 wks #40-60 even

Factoring Polynomials (special cases)

Perfect Squares:

Difference of Squares:

$y^2+22y+121$	$9x^2-400$	$x^2-10x+25$

A1 9.7 wks #60-80 even

Factoring any polynomial

1. Look for common factors
2. Look for special cases

$8m^2-16m+8$	$2x^3+40x^2+200x$	$50m^3-32m$

Factor by Grouping

1. Factor the first two terms
2. Factor the second two terms to match the first

$xy+4y-2x-8$	$ab+7b-3a-21$	$6+2y+3x^2+x^2y$

A1 9.8 wks #34-42