Before we begin, are there any questions from last day's work?

Use next page.

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) factor any polynomial using common factoring first
b) factor a binomial which is a difference of squares
c) factor various trinomials
d) factor using grouping
e) create a factoring quiz to model the types in quizzes 5.2 and 5.3

You must understand ALL the topics on the following Unit Summary.

4.5 Homework (2 days ago)

Read "Key Concepts" on p.191
pp. 192-193 #3, 4abc, 5, 6, 8, 10, 11
***Enrichment*:** p. 193 #12, 13, 15

Yesterday's entertainment: **Read "Key Concepts" on p.288**

Graph Paper Required

pp. 289-290 #3bd (GRAPH both instead of sketching),
5ac (SKETCH both – don't graph. Also, look in the answers section instead of using a graphing calculator),
6ab,10, 12, 14
***Enrichment*:** p. 291 #17 to 20

Unit 5 Quadratic Expressions ***Unit Summary***

Expanding

5.1, 5.2 Expanding, and Special Products

Factoring

5.3 Common Factoring, including Grouping
5.4 Factoring "simple" trinomials a=1
5.5 Factoring "tricky" trinomials a≠1
5.6 Factoring Difference of Squares **and** Perfect Square Trinomials

Quadratic Equations and Graphing Using Factored Form: $y = a(x-r)(x-s)$

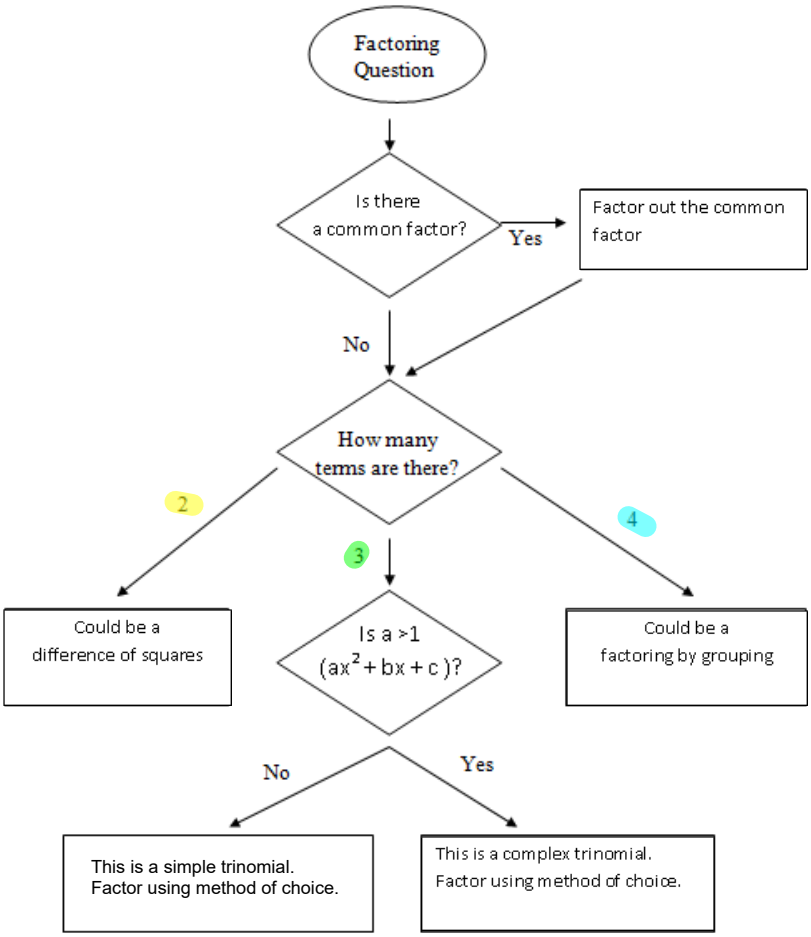
6.2 Solving: If A x B= 0, then...
4.5 Factored form. Determine the equation given...
6.3 Graph from Factored form. Find zeros, axis of symmetry, then vertex.

MPM2DI

Factoring Strategies

Date: _____

Factoring is the process where a __polynomial expression__ is written as a __product__ of other algebraic expressions.



MPM2DI Factoring Review Date: May 6/16

1. Factor by common factoring.

a) $a^3b^2 + ab^3$ b) $25x^8 - 30x^5 + 35x$ c) $7x(x+2) - 5(x+2)$

$= ab^2(a^2 + b)$ $= 5x(5x^7 - 6x^4 + 7)$ $= (x+2)(7x-5)$

2. Factor as a difference of squares.

a) $y^2 - 81$ b) $9m^2 - 1$ c) $169x^2 - 144z^2$

$= (y-9)(y+9)$ $= (3m+1)(3m-1)$ $= (13x+12z)(13x-12z)$

3. Factor as a simple trinomial.

a) $t^2 + 3t - 10$

$= (t+5)(t-2)$

b) $x^2 - 10x - 24$

$x^6 - 10x^3 - 24$

$= (x-12)(x+2)$

$9m^4 - 1$

$= (3m^2 - 1)(3m^2 + 1)$

c) $x^2 - 8x + 16$

$= (x-4)(x-4)$ or $(x-4)^2$

d) $x^4 + 6x^2 + 8$

$= (x^2+4)(x^2+2)$

4. Factor.

a) $3m^2 - m - 30$

1 30
2 15
3 10
5 6

$= (m+3)(3m-10)$

b) $8m^2 - 5m - 3$

$+x$ -24
-5

1 −24
2 −12
3 −8
4 −6

$= \frac{(8m+3)(8m-8)}{8}$

$= \frac{(8m+3)8(m-1)}{8}$

$= (8m+3)(m-1)$

c) $7x^2 + x - 8$

$= (7x+8)(x-1)$

1 8
2 4

7 −8
1 1

7 −8
1 −1

5. Factor by grouping.

a) $a^2 - 2a + ad - 2d$

$= a(a-2) + d(a-2)$

$= (a-2)(a+d)$

b) $x^4 - 3x^3 + 2x - 6$

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

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

c) $y^3 + y^2 + 2y + 2$

$= y^2(y+1) + 2(y+1)$

$= (y+1)(y^2+2)$

6. Factor fully. It might be necessary to use more than one factoring strategy in order to fully factor these polynomial expressions.

a) $x^3 - 3x^2 + 2x$

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

$= x(x-2)(x-1)$

b) $2x^4 - 18x^2$

$= 2x^2(x^2 - 9)$

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

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

$= x^2(x-1) - 4(x-1)$

$= (x-1)(x^2-4)$

$= (x-1)(x-2)(x+2)$