

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

Correct 3.1.1 from previous lesson

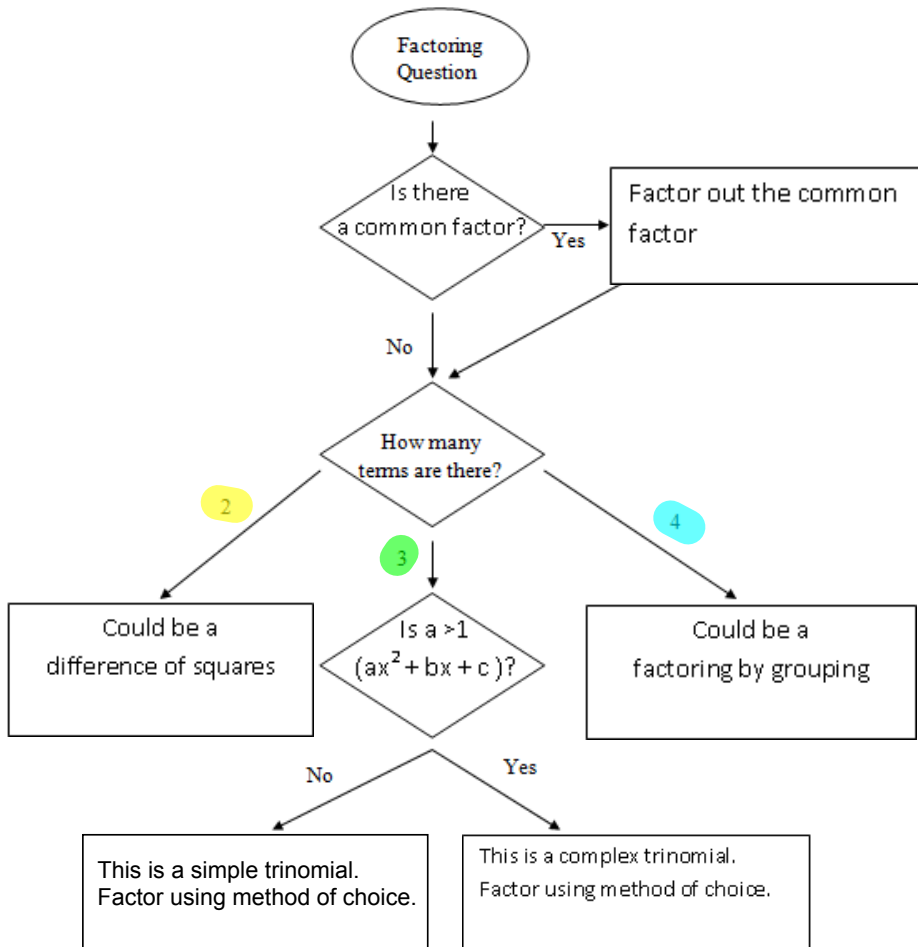
Check "Part C", and Homework 3.1.3

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) use grouping and the methods above to factor cubic and quartic expressions.

3.2.2: Factoring Strategies

Date: Mar. 22/17Factoring is the process where a polynomial expression is written as a product of other algebraic expressions.

Factoring is used to solve polynomial equations and to graph polynomial function
 Factoring will be used in this unit to accomplish these tasks.

3.2.3: Let's Practice Factoring

Date: Mar-22/17

1. Factor by common factoring.

a) $a^3b^2 + ab^3$

$= ab^2(a^2 + b)$

b) $25x^8 - 30x^5 + 35x$

$= 5x(5x^7 - 6x^4 + 7)$

c) $7x(x+2) - 5(x+2)$

$= (x+2)(7x-5)$

2. Factor as a difference of squares.

a) $y^2 - 81$

$= (y-9)(y+9)$

b) $9m^2 - 1$

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

c) $169x^2 - 144z^2$

$= (13x+12z)(13x-12z)$

3. Factor as a simple trinomial.

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

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

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

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

1 -24
2 -12
3 -8
4 -6

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

$= (x-4)(x-4)$

$= (x-4)^2$

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

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

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

8
6 ↗

4. Factor.

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

$= (3m+9)(3m-10)$

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

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

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

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

7

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

7

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

1 90
2 45
3 30
4
5 18
6 15
7
8
9 -10

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

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

18
24

2 -1
4 3

$= 6-4$

$= 2$

$= -3+8$

$= 5$

2 -3
4 1

$= -12+2$

$= -10$

a2) $3m^2 - m - 30$

$= 3m^2 + 9m - 10m - 30$

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

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

5. Factor by grouping.

$$\begin{aligned} \text{a) } & \underline{a^2 - 2a} + \underline{ad - 2d} \\ & = a(a-2) + d(a-2) \\ & = (a-2)(a+d) \end{aligned}$$

$$\begin{aligned} \text{b) } & \underline{x^4 - 3x^3} + 2x - 6 \\ & = x^3(x-3) + 2(x-3) \\ & = (x-3)(x^3+2) \end{aligned}$$

$$\begin{aligned} \text{c) } & y^3 + y^2 + 2y + 2 \\ & = y^2(y+1) + 2(y+1) \\ & = (y+1)(y^2+2) \end{aligned}$$

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

$$\begin{aligned} \text{a) } & x^3 - 3x^2 + 2x \\ & = x(x^2 - 3x + 2) \\ & = x(x-2)(x-1) \end{aligned}$$

$$\begin{aligned} \text{b) } & 2x^4 - 18x^2 \\ & = 2x^2(x^2 - 9) \\ & = 2x^2(x-3)(x+3) \end{aligned}$$

$$\begin{aligned} \text{c) } & \underline{x^3 - x^2} - \underline{4x + 4} \\ & = x^2(x-1) - 4(x-1) \\ & = (x-1)(x^2 - 4) \\ & = (x-1)(x-2)(x+2) \end{aligned}$$

Homework 3.2.4 & 3.2.5

Factoring Quiz 3.1 on Monday, March 27, 2017