

Worksheet Factoring Practice **ID: 1** #1-18
(All worksheet Answers are posted on the Website)

Today's Learning Goal(s):

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

- a) recognize and factor:
- common factors (including grouping)
 - trinomials (with $a=1$ and $a \neq 1$)
 - special cases (including a difference of squares & a perfect square trinomial)
 - combinations of the above**

Old Optional Homework

Any questions from last day's homework?

pp. 253-255 # 1aceg, 2aceg, 6aceghi, 7, 9, 10bd, 15, 16, 17a, 20a

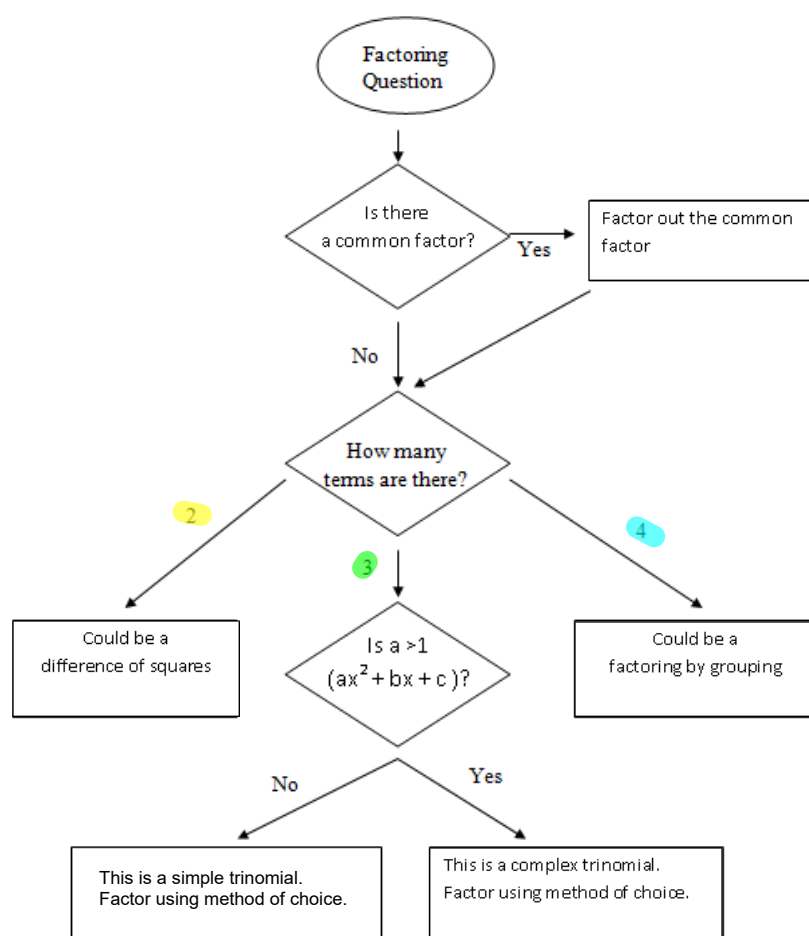
Enrichment: pp. 254-255 #13, 20, 23

MPM2DI

Factoring Strategies

Date: May 2/16

Factoring is the process where a polynomial expression is written as a product of other algebraic expressions.



Today's entertainment:

Worksheet Factoring Practice ID: 2 #1-18

(All worksheet Answers are posted on the Website)

Worksheet Factoring Practice ID: 1 #1-18 is below

MPM2D MSIP Factoring Practice "Day 1"...Do your best. Then, check answers from the Key that is on the back! ID: 1

REMEMBER - if the leading term is negative, factor out the negative first!

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Factor each completely.

1) $3k^2 - 8k$

1	45	1	50
3	15	2	25
5	9	3	
		4	
		5	10

2) $6x^2 + 32x - 24$

3) $7m^2 + 2m - 10$

4) $-9a^2 - 75a + 150$

$$\begin{aligned} & -3(3a^2 + 25a - 50) \\ & \rightarrow -3(3a - 5)(a + 10) \end{aligned}$$

5) $7p^2 - 58p - 45$

6) $50k^2 + 40k - 8$

$$= (7p + 5)(p - 9)$$

7) $m^2 - 4$

8) $64r^2 - 36$

9) $75x^2 - 48$

$$\begin{aligned} & (1 - 9) = 2(32r^2 - 18) \\ & (7 - 5) = 2(2(16r^2 - 9)) \\ & = 4(16r^2 - 9) \\ & = 4(4r + 3)(4r - 3) \end{aligned}$$

$$\begin{aligned} & (5 - 5) \\ & (+10) \\ & = 30 - 5 \\ & = 25 \end{aligned}$$

Factor the common factor out of each expression.

10) $-25xy - 45x^2y + 50x^3$

11) $20v^4 + 8v^2u^2 + 8v$

12) $24uv^2 + 24u^3 + 30u^3v$

Factor each completely.

13) $9x^2 + 30xy + 25y^2$

14) $4a^2 - 9b^2$

15) $9y^2 - 16x^2$

16) $3x^3 - 4x^2 + 6x - 8$

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

17) $20r^3 - 16r^2 + 25r - 20$

18) $3n^3 + 3n^2 + 5n + 5$

$$\begin{aligned} & = 3n^2(n + 1) + 5(n + 1) \\ & = (n + 1)(3n^2 + 5) \end{aligned}$$

Copy 240241st 1st 4th 10th, 6a, 7ab, 8ab, 9ab, 11ab
 Enrichment: p. 241 #15b, 17b

6a)
$$A = x^2 + 18x + 80$$

$A = lw$
 $= x^2 + 18x + 80$
 $= (x + 8)(x + 10)$
 $\therefore w = x + 8, l = x + 10$

if $x = 15$ $x+8$ $x+10$

$\therefore w = 15 + 8 = 23$ $l = 15 + 10 = 25$

7b) $2d^2 - 22d + 56$
 $= 2(d^2 - 11d + 28)$
 $= 2(d - 4)(d - 7)$

8a) $x^2 + bx + 12$

$\therefore m = 12$

1, 12 2, 6 3, 4

$\therefore b = 13, 8, 7$

b) $x^2 - bx + 4$

$\therefore m = 4$

1, 4 2, 2

$\therefore b = -3, b = 0?$

9a) $x^2 + 6x + c$

$\times m = c$
 $+ A = 6$

- 1, 5 $\rightarrow c = 5$
- 2, 4 $= 8$
- 3, 3 $= 9$
- 1, 7 $= -7$
- 2, 8 $= -16$
- 3, 9 $= -27$
- 4, 10 $= -40$

b) $x^2 - x + c$

Same

11a) $a^2 + 11ab + 24b^2 \rightarrow$ same as
 $= (a + 3b)(a + 8b)$

11b) $k^2 - 11km + 8m^2 = (x^2 + 11x + 24)$
 $= (k - 2m)(k - 9m)$

$$\begin{aligned}\#7) \quad & 9 - 24k + 16k^2 \\ & = 16k^2 - 24k + 9 \\ & = (4k - 3)^2\end{aligned}$$