

Correct from last day: pp.85-87 #2, 3, 5 - 7, 14

3. Expand and simplify

a)  $3(x-6)(x+5)$

$$\begin{aligned} &= 3(x^2 + 5x - 6x - 30) \\ &= 3(x^2 - x - 30) \\ &= 3x^2 - 3x - 90 \end{aligned}$$

3. Expand and simplify

b)  $3a(a-5) - (2a+1)(a-7)$

$$\begin{aligned} &= 3a^2 - 15a - (2a^2 - 14a + a - 7) \\ &= 3a^2 - 15a - (2a^2 - 13a - 7) \\ &= \underline{3a^2} - \underline{15a} - \underline{2a^2} + \underline{13a} + \underline{7} \\ &= a^2 - 2a + 7 \end{aligned}$$

5f)  $(2x+5)^2 + (2x-5)^2 - (2x-5)(2x+5)$

3bca

3. Expand and simplify

a)  $3(x-6)(x+5)$

$$\begin{aligned} &= (3x-18)(x+5) \\ &= 3x^2 + 15x - 18x - 90 \\ &= 3x^2 - 3x - 90 \end{aligned}$$

c)  $-2n(2n+1) + (n+2)^2$

$$\begin{aligned} &= -4n^2 - 2n + n^2 + 4n + 4 \\ &= -3n^2 + 2n + 4 \end{aligned}$$

14 b)  $(3a-5b)^2$

6. a) Evaluate  $3 - 2x$  for  $x = -4$ .  
 b) Evaluate  $x + 2$  for  $x = -4$ .  
 c) Expand and simplify  $(3 - 2x)(x + 2)$ .  
 d) Evaluate your answer from part (c) for  $x = -4$ .  
 e) How are your answers to parts (a) and (b) related to the answer in part (d)?

## Today's Learning Goal(s):

Date: Feb. 26/20  
(Every lesson)

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

- a) factor out the GCF from an algebraic expression.

MCF 3MI

## 2.2 Factoring Polynomials: Common Factoring

Factoring: Expressing a polynomial as a **product** of polynomials.

$$3x(x-7) \xrightarrow{\text{Expanding}} 3x^2 - 21x \xrightarrow{\text{Factoring}} 3x(x-7)$$

Whenever you are faced with a factoring question,

**ALWAYS try to Common Factor FIRST!**You are looking for a number or term that can **divide evenly into ALL of the terms** in the expression.

Ex.1 Factor, using the greatest common factor.

GCF =  $5ab$

$$\begin{array}{l} \text{a) } 4x^3 - 6x^2 = 2x^2(2x - 3) \\ \text{b) } 6x^2 - 4x + 8 = 2(3x^2 - 2x + 4) \\ \text{c) } 10a^2b^3 + 20a^3b - 5ab^3 = 5ab(2ab^2 + 4a^2 - b^2) \end{array}$$

$$\begin{array}{l} \text{d) } 2xy - 5y = y(2x - 5) \\ \text{e) } 2xz^3 - 5z^3 = z^3(2x - 5) \\ \text{f) } 2x(x-3) - 5(x-3) \quad \text{let } w = x-3 \\ \quad \quad \quad 2xw - 5w = w(2x-5) \\ \quad \quad \quad = (x-3)(2x-5) \\ \text{g) } 4y(y-2) + (3y+4)(y-2) \\ \quad \quad \quad = (y-2)(4y + 3y+4) \\ \quad \quad \quad = (y-2)(7y+4) \\ \text{h) } -12x^2 - 14x = -2x(6x+7) \end{array}$$

$$\begin{array}{l} \text{**opposites} \\ -x + 3 = 3 - x \rightarrow -1(x-3) \\ 4 - y = -1(-4 + y) = -1(y-4) \end{array}$$

i)  $3x(x-4) + 2(4-x)$


$$\begin{array}{l} = 3x(x-4) - 2(x-4) \\ = (x-4)(3x-2) \end{array}$$

j)  $7x(2x-5) - 3(5-2x)$

$$\begin{array}{l} = 7x(2x-5) + 3(2x-5) \\ = (7x+3)(2x-5) \end{array}$$

Ex. 2 The area,  $A$ , of each figure is given.  
Determine the unknown measurement.

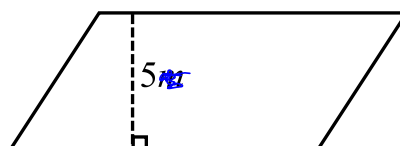
a)  $A = 18x^2 - 12x$   
 $= 6x(3x - 2)$



$6x$

$l = 3x - 2$

b)  $A = 15m^2 - 5m + 10$



$$A = bh$$

$b = 3m^2 - m + 2$

Assigned Practice: pp. 93-94 #2, 3, 5, 6, 7a, 8, 15

Be sure to keep up with your homework....SWYK is coming Friday!