

3.4E (pg.140) Factoring an Expression

Writing a numerical expression or algebraic expression as a product of factors is called **factoring the expression.**



You can use the **Distributive Property** to factor expressions!



Using Numbers:

$$3 \cdot 7 + 3 \cdot 2 = 3 (7 + 2)$$

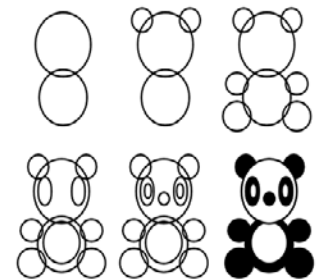
$$3 \cdot 7 - 3 \cdot 2 = 3 (7 - 2)$$



Using Variables:

$$ab + ac = a (b+c)$$

$$ab - ac = a (b-c)$$



Example:

Factor $20 - 12$ using the GCF.

Find the GCF of 20 and 12 by listing their factors.



Factors of 20: 1 2 4 5 10 20

Factors of 12: 1 2 3 4 6 12

The GCF of 20 and 12 is 4



Write each term of the expression as:



- A product of the GCF
AND
- The remaining factor



Then use the **Distributive Property** to factor the expression.

$$20 - 12 = 4(5) - 4(3)$$

Factoring an Algebraic Expression

Example: $(5n - 15)$

$$5n = 5 \cdot n$$

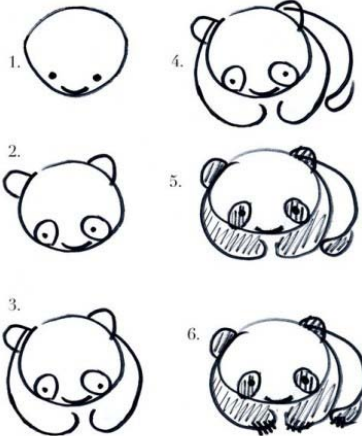
$$15 = 5 \cdot 3$$

So the GCF of $5n$ and 15 is **5**.

$$5n - 15 = 5(n) - 5(3)$$

$$= 5(n - 3)$$

How to Draw a Panda



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