

Concept: Factoring Expressions

Name: _____

OFF COMPUTER COMPONENT

1. Calculate $5(3 + 6)$ by using each of the following methods:

(a) Order of operations: _____

(b) The distributive law: _____


2. Calculate $(5 + 3)(5 + 15)$ by using each of the following methods:

(a) Order of operations: _____

(b) The distributive law: _____

3. Discuss your answers to 1 and 2 with a friend.

COMPUTER COMPONENT: Part A

Instructions: In  follow the **Content Menu** path:

Algebra > Factoring Expressions



Work through all Sub Lessons of the following Lessons **in order**:

- *Our Problem*
- *Common Factoring*
- *Factoring Trinomials*

NOTE: You will not be finishing the entire section before stopping to complete some **OFF COMPUTER EXERCISES**.



As you work through the computer exercises, make your own notes in your notebook/math journal.

When you reach the end of the lesson *Factoring Trinomials* on the computer, move on to the **OFF COMPUTER EXERCISES** below.

OFF COMPUTER EXERCISES: Part A

1. Fill in the blanks:

When factoring, always look for the greatest _____ first.

2. Complete the following.

(a) $4w^2 = 4(\quad)$ (b) $15c = 5(\quad)$ (c) $8x^2 = 2(\quad)$

(d) $-6a^2 = -2(\quad)$ (e) $21x^2y^2 = 3(\quad)$

3. Find the greatest common factor in each of the following expressions.

(a) $12z + 6$ (b) $16z - 12$ (c) $5w^2 + 25w$ (d) $20q^2 - 10q$

GCF= _____ GCF= _____ GCF= _____ GCF= _____

NOTE: You may wish to re-do the computer lesson Common Factoring with Tiles in order to complete numbers 4 and 5.

4. (a) Display $2x^2 + 4x$ with tiles.

(b) Arrange the tiles to form a rectangle. Draw this below.

(c) The factors of $2x^2 + 4x$ are _____ and _____.

5. (a) Display $2x^2 + 4x$ with tiles by using *another* method.

(b) Arrange the tiles to form a rectangle. Draw this below.

(c) The factors of $2x^2 + 4x$ are _____ and _____.

6. Factor each of the following by a common factor.
Remember to use the ‘greatest common factor’.

Example: $6w^2 - 4w$ ↗ 2w is the greatest common factor

$$= 2w(3w - 2)$$

(a) $4x + 4$

=

(b) $4y + 6$

=

(c) $6t + 9$

=

(d) $a^2 + 3a$

=

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

=

(f) $4d^2 + 6d$

=

(g) $3m^2 - 9$

=

(h) $-3d - 3$

=

(i) $-4a^2 + 8a$

=

(j) $3z^2 - 63z^5$

=

(k) $c^4 - 3c^2$

=

(l) $17h^3 - 85h^2 - 51h$

=

7. Fill in the blanks.

(a) To factor $x^2 + 6x + 8$, you need two numbers that add up to _____ and have a product of _____.

$$\text{Then } x^2 + 6x + 8 = (\quad)(\quad)$$

(b) To factor $x^2 + 10x + 16$, you need two numbers that add up to _____ and have a product of _____.

$$\text{Then } x^2 + 10x + 16 = (\quad)(\quad)$$

(d) To factor $x^2 - 2x - 3$, you need two numbers that add up to _____ and have a product of _____.

$$\text{Then } x^2 - 2x - 3 = (\quad)(\quad)$$

(e) To factor $x^2 - 6x + 8$, you need two numbers that add up to _____ and have a product of _____.

$$\text{Then } x^2 - 6x + 8 = (\quad)(\quad)$$

8. Factor each trinomial.

In each case, use the FOIL rule to multiply your answer. This allows you to check to see if your answer is correct.

Example: $b^2 + b - 30$

$$= (b - 5)(b + 6)$$

Check: Using FOIL, $(b - 5)(b + 6)$

$$= b^2 + b - 30, \text{ so the answer is correct.}$$

(a) $x^2 + 7x + 10$

=

=

(b) $x^2 - 8x + 15$

=

=

(c) $a^2 + 8a + 7$

=

=

(d) $a^2 + 2a + 1$

=

=

(e) $t^2 + 13t + 40$

=

=

(f) $t^2 - 9t + 14$

=

=

(g) $m^2 - 12m + 36$

=

=

(h) $m^2 - 15m + 54$

=

=

(i) $y^2 + 9y + 20$

=

=

(j) $y^2 - 18y + 81$

=

=

(k) $c^2 + 6c - 16$

=

=

(l) $c^2 - 5c - 36$

=

=

(m) $r^2 - 4r - 45$

=

=

(n) $r^2 - 3r - 54$

=

=