

PRE-TEST:

I. Find the factors of each number and find their GCF:

1.) 28, 32



2.) 16, 32



II. Factor out the GCF:

1.) $8x - 4$

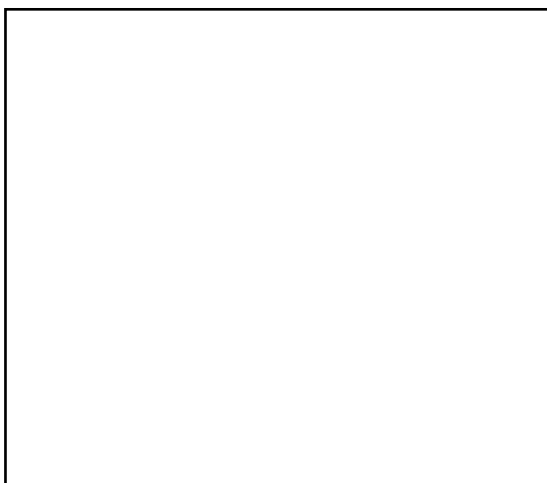


2.) $w^3 + w^8$



III. Factor the following special cases:

1.) $x^2 - 36$



2.) $s^2 + 6s + 9$



INTRODUCTION TO FACTORING

What does GCF stand for?

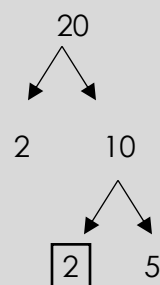
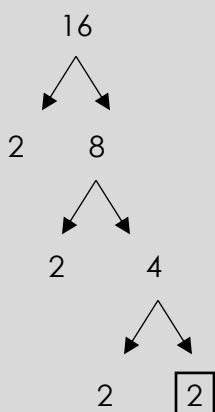
G: _____

C: _____

F: _____

I. Find the GCF

Example: Find the GCF of 16 and 20



ANSWER: $2 * 2 = 4$

Exercise:

Find the factors of each number and find their GCF :

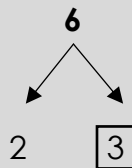
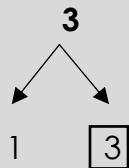
1.) 28, 32

2.) 12, 3

II. Identify when to factor:

Example: Factor out the GCF.

$$3x + 6$$



ANSWER: $3(x + 2)$

Exercises:

Factor out the GCF:

1.) $6x + 12$

2.) $y^5 - y^{12}$

3.) $3m^2n(a + b) - 1(a + b)$

III. Trinomials of degree 2 : $x^2 + Bx + C$ form (where leading coefficient = 1)

Example: Factor the following Trinomials:

$x^2 - x - 2$

Pair of factors of C		Sum of each pair
1	-2	-1
-1	2	1

1) $x^2 - x - 2$
 $= (x + 1)(x - 2)$

2) $x^2 - x - 2$
 $= x^2 + x - 2x - 2$
 $= (x^2 + x) + (-2x - 2)$
 $= x(x + 1) - 2(x + 1)$
 $= (x + 1)(x - 2)$

$x^2 + Bx + C$ form

1. Find **factors of C**
2. Find the sum of each pair
3. Identify the pair that their **sum is equal to B**
4. Rewrite the trinomial splitting the x term using the pair of factors
5. Factor by grouping

Exercises:

Factor the following trinomial:

1.) $x^2 - 5x + 6$

2.) $t^2 + 9t - 10$

III. SPECIAL CASES: Perfect Square Trinomials and Difference of Squares:

Example: Factor the following Difference of Squares

$$x^2 - y^2$$

$$(x + y)(x - y)$$

Example: Factor the following Perfect Square Trinomials

$$x^2 + 2xy + y^2$$

$$(x + y)^2$$

$$x^2 - 2xy + y^2$$

$$(x - y)^2$$

Exercises:

Factor the following special cases:

1.) $x^2 - 10x + 25$

2.) $a^2 - 81$

IV. REVIEW and CHALLENGE:

Factor the following challenging problems:

1.) $4x^3 + 16x^2 + 16x$

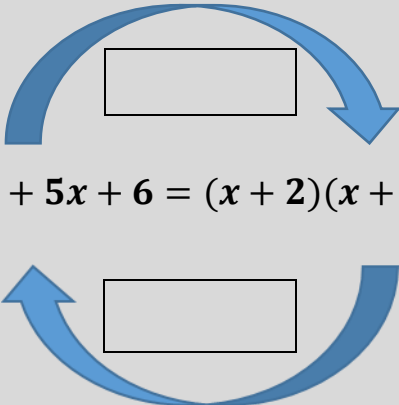
2.) $(a - b)x^2 + 2(a - b)x - 3(a - b)$

Fill in the blanks:

Word bank:

Factoring

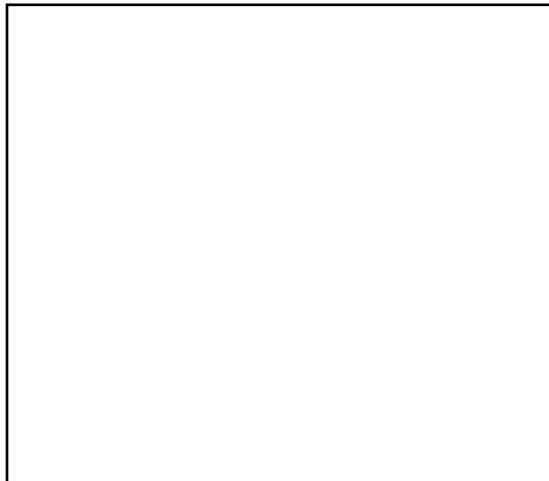
FOIL


$$x^2 + 5x + 6 = (x + 2)(x + 3)$$

POST TEST:

I. Find the factors of each number and find their GCF:

1.) 15, 25



2.) 3, 36

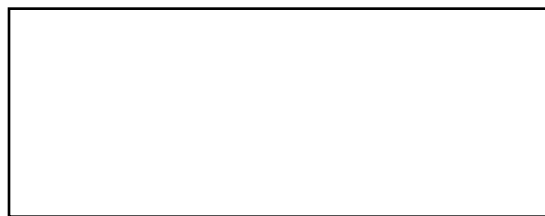


II. Factor out the GCF:

1.) $16x - 32$



2.) $4s^3w(x + y) - 3(x + y)$

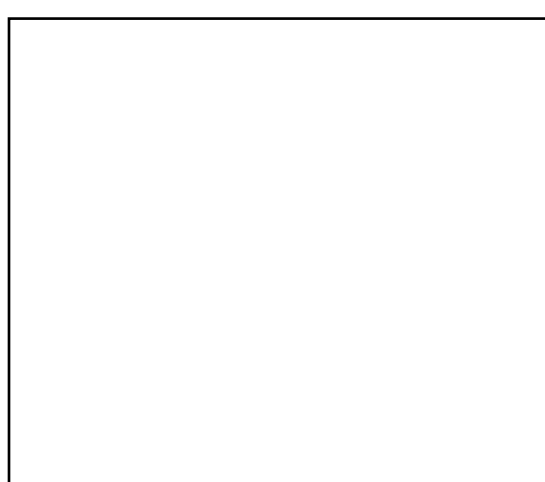


III. Factor the following special cases:

1.) $g^2 - 14g + 49$



2.) $r^2 - 100$



(ANSWER KEY)

Page2:

G: Greatest
C: Common
F: Factor

Exercise:

- 1.) 4
- 2.) 3

Page3 Exercises:

- 1.) $6(x + 2)$
- 2.) $y^5(1 - y^7)$
- 3.) $(3m^2n - 1)(a + b)$

Page4 Exercises:

- 1.) $(x - 2)(x - 3)$
- 2.) $(x + 10)(x - 1)$

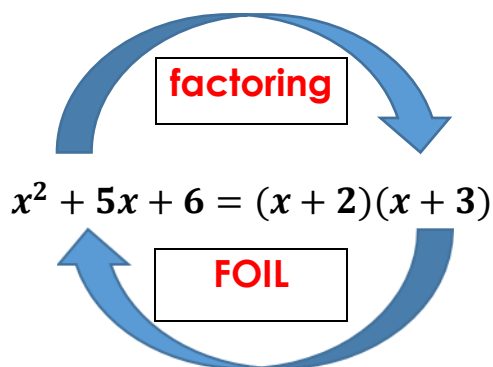
Page5 Exercises:

- 1.) Perfect Square Trinomial $(x - 5)^2$
- 2.) Difference of Squares $(x - 9)(x + 9)$

Page6 Exercises:

- 1.) $4x(x + 2)^2$
- 2.) $(a - b)(x + 3)(x - 1)$

Page7:



PRE-TEST: (ANSWER KEY)

I.

1.) 4

2.) 16

II.

1.) $4(x - 1)$

2.) $w^3(1 - w^5)$

III.

1.) $(x + 6)(x - 6)$

2.) $(s + 3)^2$

POST TEST: (ANSWER KEY)

I.

1.) 5

2.) 3

II.

1.) $16(x - 2)$

2.) $(4s^3w - 3)(x + y)$

III.

1.) $(g - 7)^2$

2.) $(r - 10)(r + 10)$