

Factoring Review

UNIT _____ LESSON _____ INVESTIGATION _____ NOTES

Lesson Vocabulary

Factoring - to solve for zeros - $ax^2 + bx + c$

Greatest Common Factor (GCF) - The greatest factor of each term.

Factor Trinomial; when $a = 1$

1. Look for GCF

2. Look at 2nd sign;

• If the sign is "+", both signs are the SAME of what 1st sign is.

• If the sign is "-", signs are DIFFERENT

3. Find factors of c to get middle term, b .

4. Write in factored form. () ()

Solve by factoring - use Zero-Product Rule.

1. factor

2. Set each factor = to zero

3. Solve.

Example Problem(s)

ex.) Factor using GCF.

a) $9x + 36$
 $9(x + 4)$

b) $6n^2 - 3n$
 $3n(2n - 1)$

c) $-8a^7 + 24a^6 - 12a^5$
 $-4a^5(2a^2 - 6a + 3)$

ex.) Factor.

a) $4w^2 - 2w$
 $2w(2w - 1)$

b) $x^2 + 6x + 8$
 $(x + 2)(x + 4)$

c) $x^2 - 14x - 32$
 $(x + 2)(x - 16)$

d) $x^2 - 7x + 12$
 $(x - 3)(x - 4)$

e) $3x^2 + 9x - 30$
 $3(x^2 + 3x - 10)$
 $3(x + 5)(x - 2)$

f) $x^2 + 16x + 64$
 $(x + 8)(x + 8)$
 $(x + 8)^2$

g) $x^2 + 4x - 24$
can't factor

h) $4x^2 - 20x - 56$
 $4(x^2 - 5x - 14)$
 $4(x + 2)(x - 7)$

ex.) Solve by factoring

a) $x^2 + 7x - 18 = 0$
 $(x + 9)(x - 2) = 0$
 $x + 9 = 0$ $x - 2 = 0$
 $x = -9$ $x = 2$

b) $16x^2 = 8x$
 $16x^2 - 8x = 0$
 $8x(2x - 1) = 0$
 $8x = 0$ $2x - 1 = 0$
 $x = 0$ $x = \frac{1}{2}$

c) $2x^2 + 4x - 6 = 0$
 $2(x^2 + 2x - 3) = 0$
 $2(x + 3)(x - 1) = 0$
 $x + 3 = 0$ $x - 1 = 0$
 $x = -3$ $x = 1$