BE- Geometry Wednesday 8-25-10

1. From memory, list the formula for d, the discriminant of a Second Degree Trinomial.

2. Find the discriminant of:

$$4x^2 - 20x + 25$$

3. If the trinomial in #2 can be factored, do so...

$4x^2 - 20x + 25$

$a = 4$

$b = -20$

$c = 25$

$b^2 - 4ac = d$ = discriminant

$(-20)^2 - 4(4)(25)$

$400 - 400 = \boxed{0}$ Yes, factorable... it is also A Perfect Square Trinomial

$\therefore \boxed{(2x-5)^2}$ = factors

Homework Review Pg. 751 # 2, 5, 8, 11, 14, 17, 20, 23, 26, 29 (middle column)

---

(2) $w^2 + 4w = \boxed{w(w+4)}$

(5) $6x^2 + 2x = \boxed{2x(3x+1)}$

(8) $N^2 + 8N + 15$

Sum = 8
Prod = 15
$+3$ $+5$

$\therefore \boxed{(N+3)(N+5)}$

(11) $m^2 + 6m - 7$

Sum = 6
Prod = -7
-1 $+7$

$\therefore \boxed{(m-1)(m+7)}$

(14) $p^2 - 5p + 6$

Sum = -5
Prod = 6
-2 -3

$\therefore \boxed{(p-2)(p-3)}$

NOTE: 1, 6 look good but the signs will not work!

(17) $N^2 - 7N - 44$

Sum = -7
Prod = -44
$+4$ -11

$\therefore \boxed{(N+4)(N-11)}$

(20) $2y^2 + 9y - 5$

Sum = 9
Prod = -10
-1 $+10$

$\therefore (2y^2 - 1y) + (10y - 5)$

$y(2y-1) + 5(2y-1)$

$\boxed{(2y-1)(y+5)}$

(23) $6r^2 - 5r + 1$

Sum = -5
Prod = 6
-2 -3

$\therefore (6r^2 - 2r) + (-3r + 1)$

$2r(3r-1) + -1(3r-1)$

$\boxed{(3r-1)(2r-1)}$

(26) $c^2 - 64 \Rightarrow \boxed{(c-8)(c+8)}$ DOS

(29) $j^2 - 12j + 36$

$\sqrt{j^2}$ $\sqrt{36}$

$\{j\}$ $\{2 \cdot j \cdot 6\}$ $\{6\}$ ✓

Perfect Square Trinomial

$\therefore \boxed{(j-6)(j-6)}$

OR

$\boxed{(j-6)^2}$

A QUADRATIC EQUATION IN STANDARD form is $ax^2 + bx + c = 0$

---

if $ax^2 + bx + c$ can be factored, the solution to the equation is easily found by the ZPP (Zero Product Property)

(Ex) $\boxed{x^2 + 3x - 10 = 0}$ Equation 1

sum = 3
prod = −10
−2, +5

$\therefore \boxed{(x-2)(x+5) = 0}$ Equation 2

if $x = 2$ then $(2-2)(2+5) = 0$

$0(7) = 0$ ✓

∴ x is a solution to Equation 2 and Equation 1

Ck $(2)^2 + 3(2) - 10 \stackrel{?}{=} 0$

$4 + 6 - 10 \stackrel{?}{=} 0$ ✓

Similarly, $x = -5$ is also a solution.

Ck $(-5)^2 + 3(-5) - 10 \stackrel{?}{=} 0$

$25 - 15 - 10 \stackrel{?}{=} 0$ ✓

Solution $\boxed{x = \{2, -5\}}$

Name the two solutions using ZPP:

(A) $(x-8)(x-2)=0$

(B) $(3x+1)(2x-7)=0$

(C) $(5x-4)(4x+1)=0$

Can you find the discriminant of $-3x^2+2x$?

Hint:

$-3x^2+2x+0$

$a=-3$ $\quad b^2-4ac \rightarrow 0$

$b=2$ $\quad (2)^2-4(-3)(0)$

$c=0$ $\quad \boxed{4}=d$

Classwork / homework ⇒ Worksheet (14 problems)

Geometry 1 Name_____

8-25-10 HW Practice

Date_____ Period____

Find the value of the discriminant of each quadratic equation.

1) $-r^2 + 6r + 3 = 0$

2) $x^2 - x - 4 = 0$

3) $-5n^2 - n + 1 = 0$

4) $-3b^2 + 4b - 1 = 0$

Factor each completely.

5) $b^2 - 9b + 20$

6) $v^2 - v$

7) $5p^2 - 33p - 56$

8) $5x^2 - 16x - 16$

9) $3k^2 + 16k + 20$

10) $2r^2 - 11r + 14$

Solve each equation by factoring.

11) $x^2 - 2x - 15 = 0$

12) $v^2 + 2v - 8 = 0$

13) $4n^2 - 15n - 25 = 0$

14) $6a^2 + 7a - 5 = 0$