BE-1B MONDAY 12-4-06

# AHSGE WORKBOOK - Page 63 #3

EOL through (2, 5), (4, 6)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

SLOPE

(2, 5), (4, 6)

$$m = \frac{6-5}{4-2} = \frac{1}{2} = m$$

$y = mx + b$ use (2, 5)
x, y

$5 = \frac{1}{2} \cdot 2 + b$

$5 = 1 + b$

$-1 \quad -1$

$4 = b$

$y = mx + b$

$y = \frac{1}{2}x + 4$

Graph?

A QUADRATIC (major term 2nd power) TRINOMIAL (3 term polynomial) IN STANDARD form is WRITTEN:

$$ax^2 + bx + c$$

↑ Number ↑ Number ↑ Number

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FIND a, b, c

$2x^2 + 3x + 4$

$7x^2 - 2x + 9$

$x^2 + 8x - 2$

$4x^2 + 3x$

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QE ⇒ QUADRATIC EQUATION: $ax^2 + bx + c = 0$

NOT ALL QUADRATIC EQUATIONS CAN be FACTORED, BUT if they CAN be FACTORED you CAN easily SOLVE THEM WITH ZPP:

Ex) $x^2 + 5x + 6 = 0$ ✶

$(x+2)(x+3) = 0$ ✶

$\boxed{x = \{-2, -3\}}$

THE trick: HOW DO you FACTOR $x^2 + 5x + 6$?

MAKE SURE $x^2+5x+6$ is in STANDARD FORM. It is. FIND a, b, c.

$$x^2+5x+6$$

$a=1 \quad b=5 \quad c=6$

sum = b = 5

product = ac = 1·6 = 6

MAGIC NUMBERS

FIND 2 FACTORS OF a·c that ADD (sum) to b.

$$x^2+5x+6$$

sum ⇒ 5

prod ⇒ 1·6 = 6

+2 +3

MAGIC NUMBERS

FBG $x^2+2x+3x+6$

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

$x(x+2)+3(x+2)$

$\boxed{(x+2)(x+3)}$

Ex) $7x^2 + 22x + 3$

Sum ⇒ 22

Prod ⇒ $7 \cdot 3 = 21$

$+1$ $+21$

$7x^2 + 1x + 21x + 3$

$(7x^2 + 1x) + (21x + 3)$

$x(7x + 1) + 3(7x + 1)$

$(7x+1)(x+3)$

If $7x^2 + 22x + 3 = 0$

$(7x+1)(x+3) = 0$

$x = \{-\frac{1}{7}, -3\}$

Ck

$(7x+1)(x+3)$

$7x^2 + 21x + 1x + 3$ ✓

Your turn:

FACTOR: $x^2 + 8x + 15$

FACTOR: $2x^2 + 7x + 5$

If there is a GCF in all 3 terms of the trinomial, "pull it out" before starting to factor.

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HW: Page 492 # 4 → 7

↑ PUT THIS IN "order" 1st

Page 498 # 4, 6, AND 7.