BE-1B WEDNESDAY 11-28-07

1. Find the EOL through (2,5), (4,6).
2. Find EOL with slope -2 through $(0,-4)$.
3. What is the range of $y = 2x^2 + 1$ if the domain is $\{-1, 0, 3\}$?
4. $f(x) = -x^2 + 4x - 5$, what is $f(3)$.

Take out Homework: Pg. 484 #34-39

Also see WB

* ① Pg. 63 #3
* ② Pg 65 #9
* ③ Pg 47 #2
* ④ Pg 47 #3

* second time

ZPP = Zero Product Property

"Zippy"

Very important and useful property that is used in solving equations, especially useful when solving equations by factoring.

What is it?

If a and b are any real numbers and $ab = 0$ then $a = 0$, $b = 0$ or both $a, b = 0$

Ex) $3x = 0$ $\quad x = ?$

Ex) $x(x-2) = 0$ $\quad x = ?$

$x = 0$ or $x = 2$

EX) USING ZPP TO SOLVE A "SECOND degree" EQUATION.

NOTE: LINEAR, or first degree equations have 1 SOLUTION (VALUE FOR x)
SECOND degree equations have 2 SOLUTIONS

$$x^2 - 4x = 0 \quad \text{factor}$$

$$x(x-4) = 0 \quad \text{ZPP}$$

$$\boxed{x = 0 \text{ or } x = 4}$$

CK $x = 0$

$$x^2 - 4x \stackrel{?}{=} 0$$

$$(\,)^2 - 4(\,) \stackrel{?}{=} 0$$

$$(0)^2 - 4(0) \stackrel{?}{=} 0 \checkmark$$

CK $x = 4$

$$x^2 - 4x \stackrel{?}{=} 0$$

$$(\,)^2 - 4(\,) \stackrel{?}{=} 0$$

$$(4)^2 - 4(4) \stackrel{?}{=} 0$$

$$16 - 16 \stackrel{?}{=} 0 \checkmark$$

SOLUTION = $\{x \mid x = 0, 4\}$

Ex 5 Pg 483 Solve: $x^2 = 7x$

$-7x \quad -7x$

$x^2 - 7x = 0$

$x(x-7) = 0$ ZPP

Solution = $\{x \mid x = 0, 7\}$

Ex Solve: $(x-3)(x+4) = 0$

ZPP ⇒ Either $x-3=0$ or $x+4=0$

$\boxed{x = 3}$ or $\boxed{x = -4}$

Ex Solve: $(2x-4)(3x+5) = 0$

$2x-4=0$ or $3x+5=0$

$2x = 4$ $\quad 3x = -5$

$\boxed{x = \frac{4}{2} = 2}$ $\quad \boxed{x = \frac{-5}{3}}$

Ex 4
Pg 483

Solve:

$$(d-5)(3d+4)=0$$

$d-5=0$ or $3d+4=0$

$\boxed{d=5}$

$3d=-4$

$\boxed{d=-\frac{4}{3}}$

GROUP PRACTICE / HOMEWORK:

- Pg 485 # 48 to 55