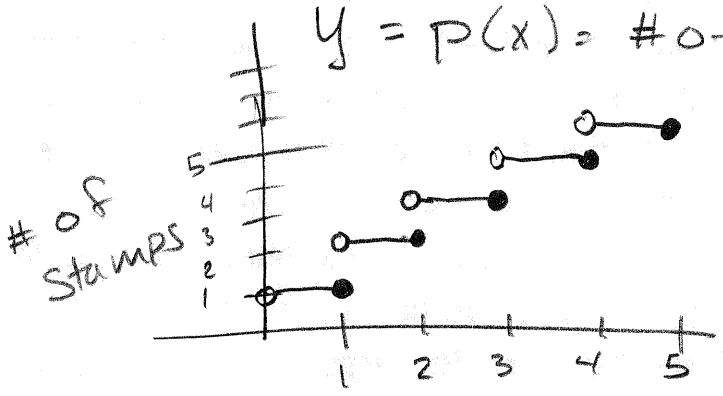
Sec 11/16/2012 – Exam 5 Review

#39

44¢ 1st

17¢ Each Additional

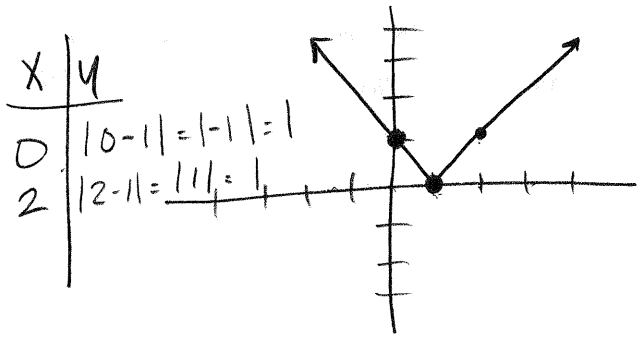
$y = p(x)$ = # of Stamps



#12 $f(x) = |x - 1|$ Graph, Domain & Range

Absolute Value

$\rightarrow 1$



x	y
0	$\|0-1\| = \|-1\| = 1$
2	$\|2-1\| = \|1\| = 1$

Domain: $(-\infty, \infty)$

Range: $[0, \infty)$

~~$(0, \infty)$~~

Pg 562

5 $x^2 + 4x = 15$

$\frac{4}{2} = 2$

$(2)^2 = 4$

$x^2 + 4x + 4 = 15 + 4$

$\sqrt{(x+2)^2} = \sqrt{19}$

$x + 2 = \pm\sqrt{19}$

-2

$x = -2 \pm \sqrt{19} = -2 \pm 4.4$

Nearest 10^{th}

$x = 2.4, -6.4$

Pg 565

44

$f(x) = -2x^2 + 8x - 5$

$f(x) = a(x-h)^2 + k$

Vertex: $x = \frac{-b}{2a}$

$f(x) = -2(x^2 - 4x + 4 - 4) - 5$

$\frac{-4}{2} = -2$

$(-2)^2 = 4$

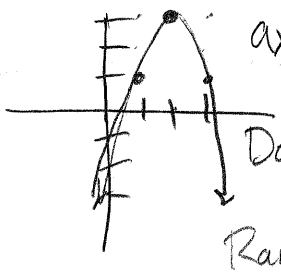
$-2[(x-2)^2 - 4] - 5$

$-2(x-2)^2 + 8 - 5$

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

$\rightarrow +2$ $\quad$ $+3$

Vertex: $(2, 3)$



axis: $x = 2$

Domain: $(-\infty, \infty)$

Range: $(-\infty, 3]$

Discriminent = $b^2 - 4ac$

is positive
and a perfect Square then 2 Rational solutions
and not a perfect Square
then 2 irrational Solutions

is negative
then 2 complex Solution

is zero
then 1 Ration Solution

Rational Eq Example

$\frac{1}{x+5} + \frac{2}{x-5} = \frac{7}{(x+5)(x-5)}$ LCD: $(x+5)(x-5)$

D: $x \neq -5, 5$

$1(x-5) + 2(x+5) = 7$ (x^2-25)

$x - 5 + 2x + 10 = 7x^2 - 175$

$3x + 5 = 7x^2 - 175$
$-3x \quad -5 \qquad -3x \quad -5$

$0 = 7x^2 - 3x - 180$
$a=7 \quad b=-3 \quad c=-180$

Exact:

$x = \frac{3 \pm 3\sqrt{561}}{14}$

Approx:

$x = 5.2, -4.9$

Pg 563

24

$p^4 - 10p^2 + 9 = 0$ (p^4: u^2, p^2: u)

$u = p^2$

$u^2 - 10u + 9 = 0$

$u^2 = (p^2)^2 = p^{2 \cdot 2} = p^4$

$(u - 9)(u - 1) = 0$

$u - 9 = 0 \quad u - 1 = 0$

$u = 9 \quad u = 1$

$\sqrt{p^2} = \sqrt{9} \qquad p^2 = 1$

$p = \pm\sqrt{9} \qquad p = \pm\sqrt{1}$

$p = \pm 3, \pm 1$