

After Quiz Solutions.

1) $\frac{3x^2 - 9x - 25}{3} = 0$ ← The 3 is annoying. Divide to get rid of it.

$$x^2 - 3x - \frac{25}{3} = 0$$

	x	-1.5	
x	x^2	$-1.5x$	$-\frac{25}{3}$
-1.5	$-1.5x$	2.25	-2.25

Can't factor b/c the fraction. So CTS instead

$$(x - 1.5)^2 - \frac{25}{3} - 2.25 = 0$$

Change fraction to decimal

$$(x - 1.5)^2 - 8.\bar{3} - 2.25 = 0$$

$$(x - 1.5)^2 - 10.58\bar{3} = 0$$

square root remember positive & negative

$$(x - 1.5)^2 = 10.58\bar{3}$$

$$\sqrt{10.58\bar{3}} = 3.25$$

$$x - 1.5 \approx 3.25$$

$$x - 1.5 \approx -3.25$$

$$x \approx 4.75$$

$$x \approx -1.75$$

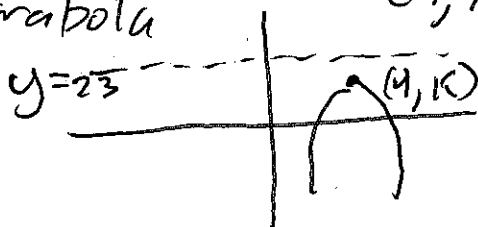
I rounded so it's " \approx " instead of " $=$ " approximately equal

2) $-3(x - 4)^2 + K = 23$ has no solutions.

↑
upside down parabola

↑
vertex of $(4, K)$

↑
flat line of $y = 23$



If $K < 23$, the parabola is below the line. Thus, there are no solutions.

3) $x^2 + bx - 99 = 0$ has solutions $x=9$ & $x=a$.

Plug in $x=9$ (a solution is something you can plug in to the EQ)

$$9^2 + b(9) - 99 = 0$$

$$81 + 9b - 99 = 0$$

$$9b - 18 = 0$$

$$\frac{9b = 18}{9}$$

$$b = 2$$

$$x^2 + 2x - 99 = 0$$

$$(x+11)(x-9) = 0$$

$$x = -11, x = 9$$

$$a = -11$$

plug in
b

OR

3) $x^2 + bx - 99 = 0$ has solutions $x=9$ & $x=a$

So the factors are $(x-9)(x-a)$

	x	-9
x	x^2	$-9x$
$-a$	$-ax$	$9a$

Add to bx

$$\text{So } \frac{9a}{9} = \frac{-99}{9}$$

$$a = -11$$

$$\text{And } -ax + -9x = bx$$

$$\text{Sub } a = -11, -(-11)x - 9x = bx$$

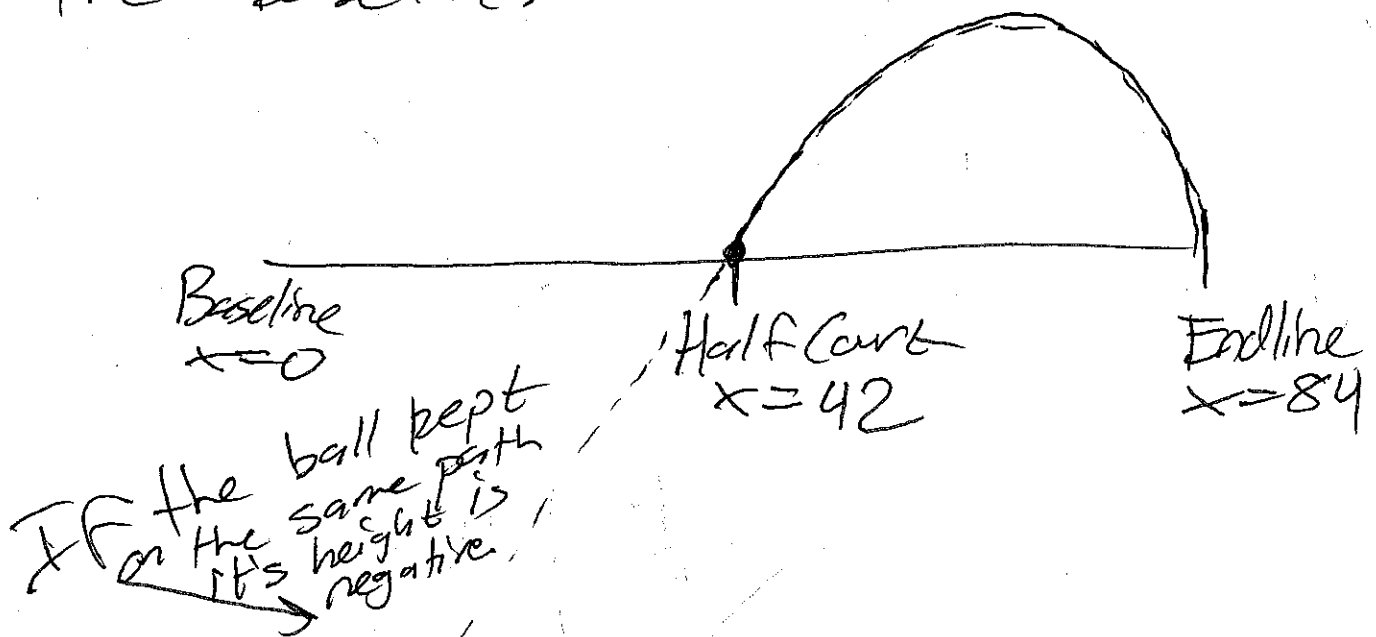
$$11x - 9x = bx$$

$$\frac{2x}{x} = \frac{bx}{x}$$

$$2 = b$$

$$4) a) b(0) = -\frac{1}{20}(0)^2 + \frac{63}{10}(0) - 176.4 = -176.4$$

The ball would be 176.4 feet below the ground if the path continued to the baseline.



$$b) \cdot -20 \left(-\frac{1}{20}x^2 + \frac{63}{10}x - 176.4 = 0 \right) \cdot -20$$

$$x^2 - 126x + 3528 = 0$$

	x	-63	
x	x^2	$-63x$	3528
-63	$-63x$	3969	-3969

No way I'm going to factor that mess.
So CTS.

$$(x - 63)^2 - 441 = 0$$

$$(x - 63)^2 = 441$$

$$x - 63 = 21 \rightarrow x = 84$$

$$x - 63 = -21 \rightarrow x = 42$$

The x intercepts are 42 & 84.
This means the ball has a height
of zero at $x=42$ & $x=84$. The
ball is on the ground there. I
do not make the basket.

(It's actually an air ball)

