

Advanced Algebra

Unit 4: Quadratics

Page 159 (SL Text book) Assignment #5

Solve the following quadratics. Leave all answers in Exact format. You might complete the Square or factor.

If FACTORING jumps out at you, then you should factor to get the roots. If it doesn't factor easily and you can complete the square, you should do that. This is about you thinking what to do.

1) $(x-2)^2=10$

$$x = 2 \pm \sqrt{10}$$

2) $x^2+7x+10$

$$(x+5)(x+2) = 0$$

$$x = -5 \text{ and } x = -2$$

3) $(x-5)^2-22=0$

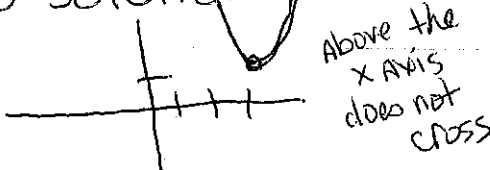
$$x = 5 \pm \sqrt{22}$$

4) $x^2-6x+10$

$$(x^2-6x+9) - 9 + 10$$

$$(x-3)^2 + 1 = 0$$

No solution



5) $x^2+7x+12$

$$(x+4)(x+3) = 0$$

$$x = -4 \text{ and } x = -3$$

5) $x^2-8x-12$

$$(x^2-8x+16) - 16 - 12$$

$$(x-4)^2 - 28 = 0$$

$$x = 4 \pm \sqrt{28}$$

6) $(x+10)^2=58$

$$x = -10 \pm \sqrt{58}$$

7) $(x-8)^2-22=0$

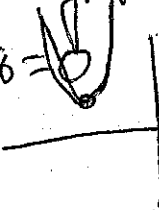
$$x = 8 \pm \sqrt{22}$$

8) $x^2+9x+20=0$

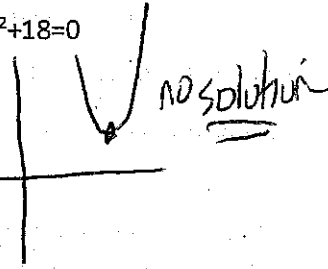
$$(x+5)(x+4) = 0$$

$$x = -5 \text{ and } x = -4$$

9) $(x+15)^2 = -18$

No solution
 can't $\sqrt{\quad}$ a negative
 OR think about graph
 $(x+15)^2 + 18 = 0$


10) $(x-22)^2 + 18 = 0$



11) $x^2 + 15x + 36 = 0$

$(x+12)(x+3) = 0$

$x = -12$

$x = -3$

OR complete square

$(x^2 + 15x + \frac{225}{4}) - \frac{225}{4} = -36$

$(x+7.5)^2 - 20.25 = -36$

$x = -7.5 \pm 4.5$

$x = -3 \quad x = -12$

12) $x^2 + 8x + 12 = 0$

$(x+6)(x+2) = 0$

$x = -6 \quad x = -2$

13) $x^2 + 14x - 16 = 0$

$(x^2 + 14x + \frac{49}{4}) - \frac{49}{4} - 16 = 0$

$(x+7)^2 - 65 = 0$

$x = -7 \pm \sqrt{65}$

14) $(x-5)^2 - 22 = 0$

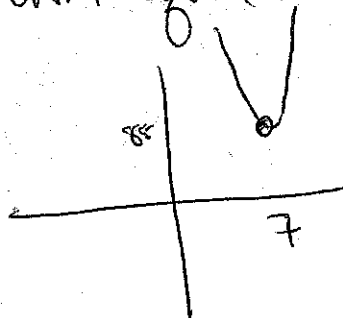
$x = 5 \pm \sqrt{22}$

15) $(x-4)^2 = 34$

$x = 4 \pm \sqrt{34}$

16) $(x-7)^2 = -88$

NO solution
 can't square root negative



17) $(x+4)^2 - 38 = 0$

$x = -4 \pm \sqrt{38}$