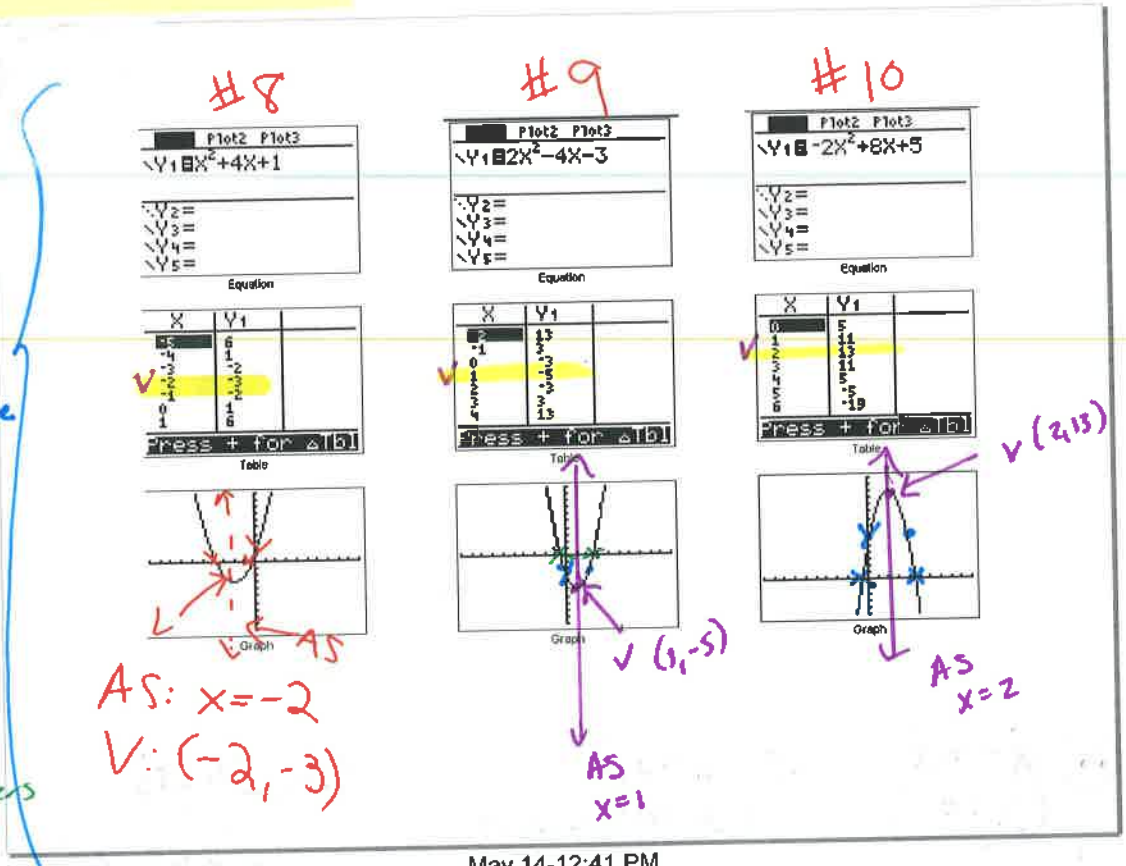
CHAPTER 10 REVIEW HW

#'s 8-18, 20, 21, 24-27, 31-33

For #'s 8-10 - Know how to find shape, AS, vertex & y int

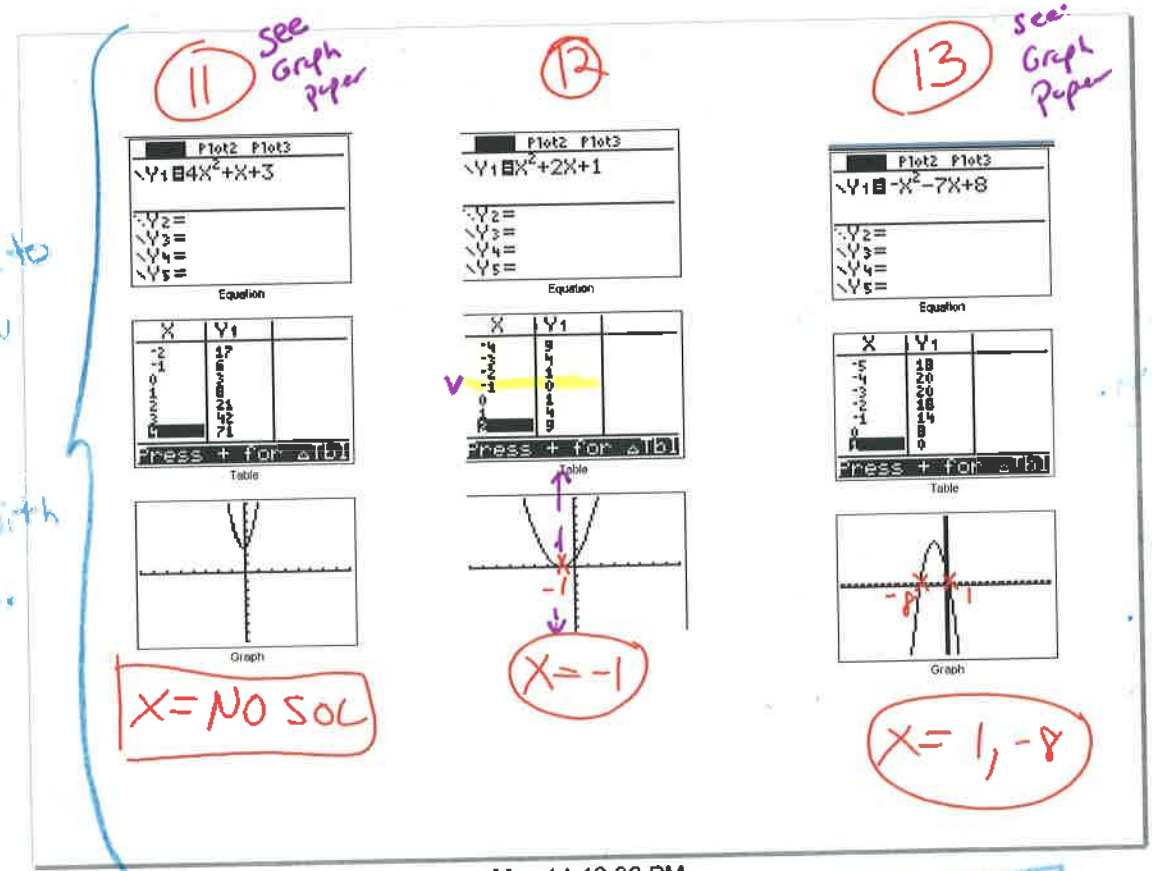
NOTE: For Problems like this, I will Give you x int's that are integers



May 14-12:41 PM

TIPS

You need to know how to find AS + Vertex with decimals.



May 14-12:36 PM

Rio HW

Tip: AS is a line must write x = #

Vertex is a point (x, y)

R10 #11+13 HAVE FRACTIONS FOR A.S

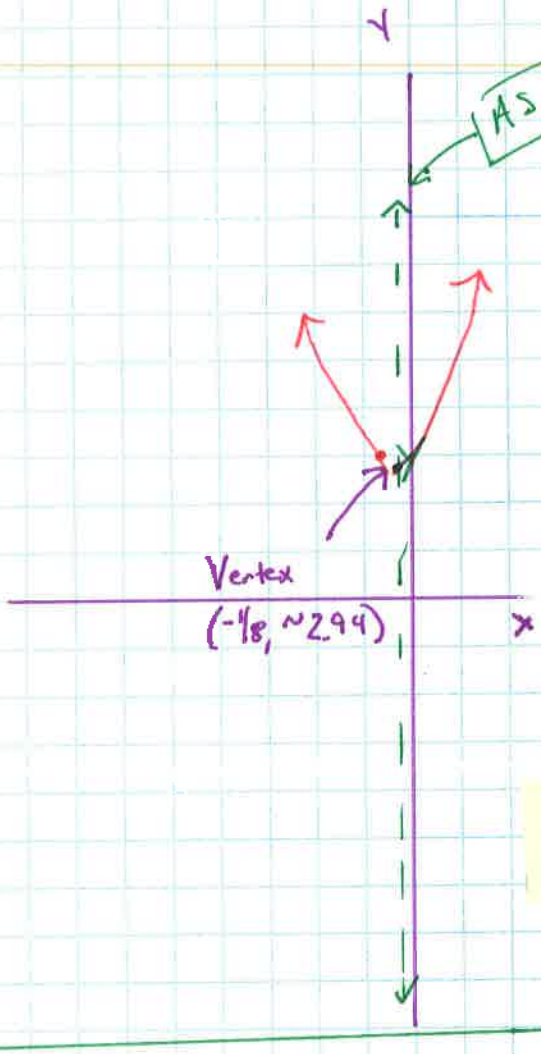
#11

$4x^2 + x + 3 = 0$

$A = 4$ $B = 1$ $C = 3$ y int

$AS = \frac{-B}{2A} = \frac{-1}{2(4)} = x = -1/8$

$V(-1/8, \sim 2.94)$ $y = 4(-1/8)^2 + -1/8 + 3$



#13

$y = -x^2 - 7x + 8$

$a = -1$ $b = -7$ $c = 8$

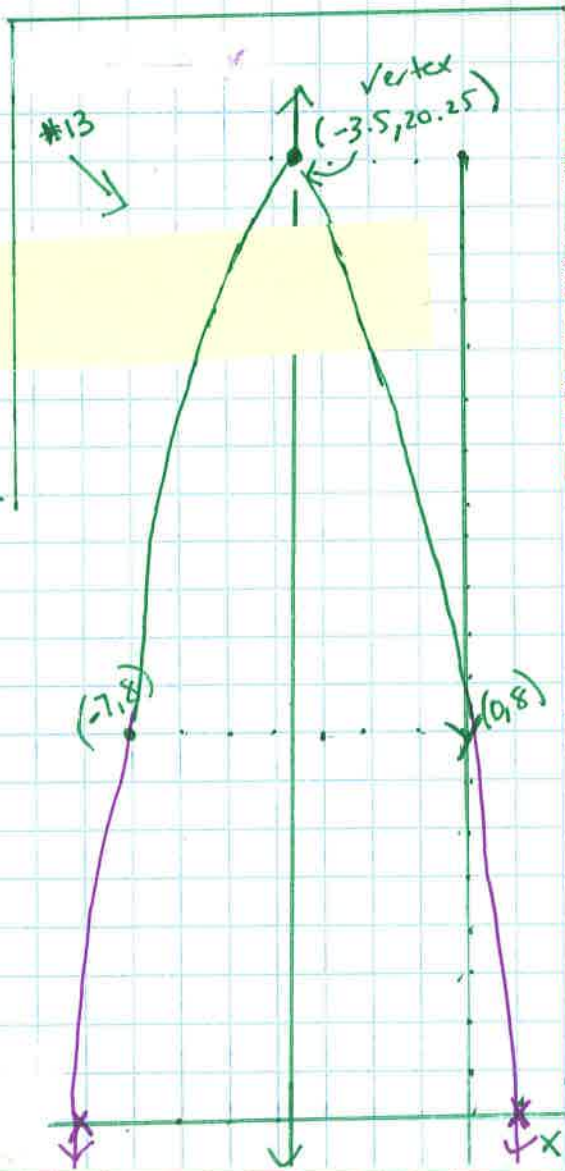
$x = \frac{7}{2(-1)}$ $x = -3.5$

$y = -(-3.5)^2 - 7(-3.5) + 8$

$y = 20.25$

V

x	-8	-7	-3.5	0	1
y	0	8	20.25	8	0



10.4 Use Square Roots to Solve Quadratic Equations pp. 652–658

EXAMPLE

Solve $5(x-6)^2 = 30$. Round the solutions to the nearest hundredth.

$5(x-6)^2 = 30$ Write original equation.

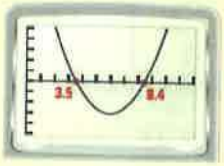
$(x-6)^2 = 6$ Divide each side by 5.

$x-6 = \pm\sqrt{6}$ Take square roots of each side.

$x = 6 \pm \sqrt{6}$ Add 6 to each side.

▸ The solutions of the equation are $6+\sqrt{6} \approx 8.45$ and $6-\sqrt{6} \approx 3.55$.

CHECK To check the solutions, first rewrite the equation so that 0 is on the one side as follows: $5(x-6)^2 - 30 = 0$. Then graph the related function $y = 5(x-6)^2 - 30$. The x-intercepts are about 8.4 and about 3.5. So, each solution checks.



EXERCISES

Solve the equation. Round your solutions to the nearest hundredth, if necessary.

14. $6x^2 - 54 = 0$
15. $3x^2 + 7 = 4$
16. $g^2 + 11 = 24$
17. $7n^2 + 5 = 9$
18. $2(a+7)^2 = 34$

(14) $\sqrt{x^2} = \sqrt{9}$ → $x = \pm 3$

(15) $\sqrt{x^2} = \sqrt{-1}$ → $x =$ NO SOLUTION

May 14-1:07 PM

(16) $\sqrt{x^2} = \sqrt{13}$ → $x \approx \pm 3.61$

(17) $\sqrt{n^2} = \sqrt{4/7}$ → $n \approx \pm .76$

(18) $\sqrt{(a+7)^2} = \sqrt{17}$

$a+7 = \pm\sqrt{17}$

$a = -7 \pm \sqrt{17}$

$a = -7+\sqrt{17}$ → $a = -2.88$

$a = -7-\sqrt{17}$ → $a = -11.12$

10.5 Solve Quadratic Equations by Completing the Square pp. 663–668

EXERCISES

Solve the equation by completing the square. Round your solutions to the nearest hundredth, if necessary.

20. $x^2 - 14x = 51$
21. $2a^2 + 12a - 4 = 0$

When completing the square this is $C = 49$.

Example: find C for $x^2 - 9x + C$

$C = \left(\frac{-9}{2}\right)^2 = (-4.5)^2$

$C = 20.25$

(20) $x^2 - 14x + 49 = 51 + 49$

$\sqrt{(x-7)^2} = \sqrt{100}$

$x - 7 = \pm 10$

$+7 \quad +7$

$x = 7 \pm 10$

$x = 7+10$ → $x = 17$

$x = 7-10$ → $x = -3$

(21) $\frac{2a^2}{2} + \frac{12a}{2} - \frac{4}{2} = \frac{0}{2}$

$a^2 + 6a - 2 = 0$

$+2 \quad +2$

$a^2 + 6a + 9 = 2 + 9$

$\sqrt{(a+3)^2} = \sqrt{11}$

$a + 3 = \pm\sqrt{11}$

$a = -3 \pm \sqrt{11}$

$a \approx .32, -6.32$

May 11-9:24 AM

10.6 Solve Quadratic Equations by the Quadratic Formula pp. 671–676

EXERCISES

Use the quadratic formula to solve the equation. Round your solutions to the nearest hundredth, if necessary.

24. $x^2 - 2x - 15 = 0$
25. $2m^2 + 7m - 3 = 0$
26. $-w^2 + 5w = 3$
27. $5n^2 - 7n = -1$

[redacted]

(24) $A=1 \quad B=-2 \quad C=-15$

$$x = \frac{2 \pm \sqrt{4 - 4(1)(-15)}}{2(1)}$$

$$x = \frac{2 \pm \sqrt{64}}{2} = \frac{2 \pm 8}{2}$$

$x = \frac{2+8}{2}$ $\qquad$ $x = \frac{2-8}{2}$

$x = 5$ $\qquad$ $x = -3$

(25) $A=2 \quad B=7 \quad C=-3$

$$x = \frac{-7 \pm \sqrt{49 - 4(2)(-3)}}{2(2)}$$

$$x = \frac{-7 \pm \sqrt{73}}{4}$$

* ROUND AT END 2 DECIMALS

$x = \frac{-7+\sqrt{73}}{4}$ $\qquad$ $x = \frac{-7-\sqrt{73}}{4}$

$x \approx .39$ $\qquad$ $x = -3.89$

(26) $-w^2 + 5w = 3$
$\quad -3 \quad -3$

$$-w^2 + 5w - 3 = 0$$

$a = -1 \quad b = 5 \quad c = -3$

$$x = \frac{-5 \pm \sqrt{25 - 4(-1)(-3)}}{2(-1)}$$

$$x = \frac{-5 \pm \sqrt{13}}{-2}$$

$x = \frac{-5+\sqrt{13}}{-2}$ $\qquad$ $x = \frac{-5-\sqrt{13}}{-2}$

$x \approx 0.697$

ROUND 2 DECIMALS

$x \approx 0.70$

$x =$

(27) $5N^2 - 7N = -1$
$\quad +1 \quad +1$

$$5N^2 - 7N + 1 = 0$$

$A = 5 \quad B = -7 \quad C = 1$

$$x = \frac{7 \pm \sqrt{49 - 4(5)(1)}}{2(5)}$$

$$x = \frac{7 \pm \sqrt{29}}{10}$$

$x = \frac{7+\sqrt{29}}{10}$ $\qquad$ $x = \frac{7-\sqrt{29}}{10}$

$x \approx 1.24$ $\qquad$ $x = .16$

10.7 Interpret the Discriminant

pp. 678–683

EXAMPLE

Equation $ax^2 + bx + c = 0$	Discriminant $b^2 - 4ac$	Number of solutions
a. $-16x^2 + 8x - 1 = 0$	$8^2 - 4(-16)(-1) = 0$	One solution
b. $4x^2 - 5x + 2 = 0$	$(-5)^2 - 4(4)(2) = -7$	No solution
c. $x^2 + 3x = 0$	$3^2 - 4(1)(0) = 9$	Two solutions

$D = B^2 - 4AC$

EXERCISES

PLES 2 678–679

Tell whether the equation has *two solutions, one solution,* or *no solution.*

31. $x^2 - 2x + 2 = 0$

32. $4g^2 + 12g + 9 = 0$

33. $5w^2 - 4w - 1 = 0$

D = -4
NO SOL

D = 0
1 SOL

D = 36
2 SOL'S

$D = (-2)^2 - 4(1)(2)$

$D = -4$

$D = 12^2 - 4(4)(9)$

$D = 0$

$D = (-4)^2 - 4(5)(-1)$

$D = 16 + 20$

$D = 36$