Solving by Graphing

agenda

Warm-Up

HW Wheel

Notes (Flip Book)

HW: Practice (2 pages)

Reminders

Algebra I Simulation THURSDAY

Quiz Friday

HW 5.6 Due Friday

Tutoring due 4/11

Warm--Up Tuesday

TURN IN QUADRATIC FORMULA PRACTICE NOW

1. Name one algebra topic you are confident with. Then name one topic you struggle with. Look through your notebook for ideas!

2. Find the equation for the axis of symmetry in the quadratic formula.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

discriminant finds # of solutions

finds solutions

$$X = \frac{-b}{2a}$$ ← axis symmetry

Homework Spin

GoOd LuCk

2nd - Free

3rd - Completion

4th - Completion

5th - Accuracy

7th - Free

Solving by Graphing

The roots, zeroes, or x-intercepts are also called the SOLUTIONS of the equation. ↑ crosses x-axis

1. Find the zeroes of the graph below.

↑x-intercept

{-3, 0}

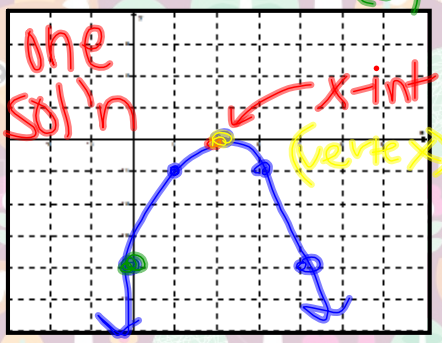
2. Sketch the graph of $-x^2 + 4x = 4$

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

$-4 \quad -4$

What are the x & y intercept(s)?

x-int: (2, 0) y-int: (0, -4)



3. Complete the table that includes the solution(s) of the quadratic equation.

$x^2 - 6x = 0$

y= 2nd GRAPH

x	-1	0	1	2	5
y	7	0	-5	-8	-5

y = 0

x-value(s) when y = 0

Quadratics can have TWO, ONE, or NO solutions.

Solve the following equations using your calculator.

4. $f(x) = 5x^2 + 29x + 20$

y

TWO {-4, -5}

5. $-x^2 - 5 = -4x$

$+4x \quad +4x$

$-x^2+4x-5=0$

NO SOLN

6. $x^2 = +4$

$x^2-4=0$

{-2, 2}

Calculator Steps

1. Solve for y or for zero. Enter that equation into y =
2. Plug in $y_2 = 0$
3. Graph
4. Press 2nd TRACE 5: Intersect
5. Find BOTH intersections

$y_1 = 0$

OR look at table and find y = 0 (doesn't work for decimals)

Algebra I – Unit 9: Topic 3 – Solving Quadratics by Graphing

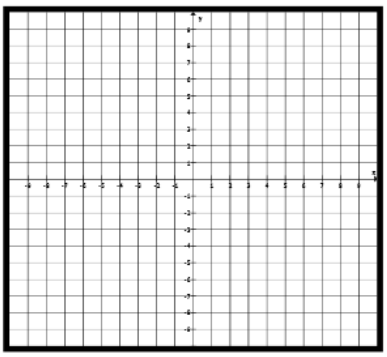
Practice - Solving Quadratics by Graphing **pp 622-624**

Name _____ Date _____ Period _____

Complete the table including the solution(s) of the quadratic. Then graph the quadratic equation.

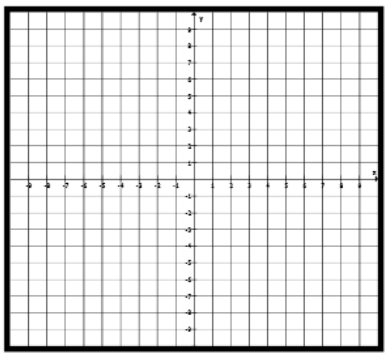
1. $x^2 + 7x + 10 = 0$

x					
y					

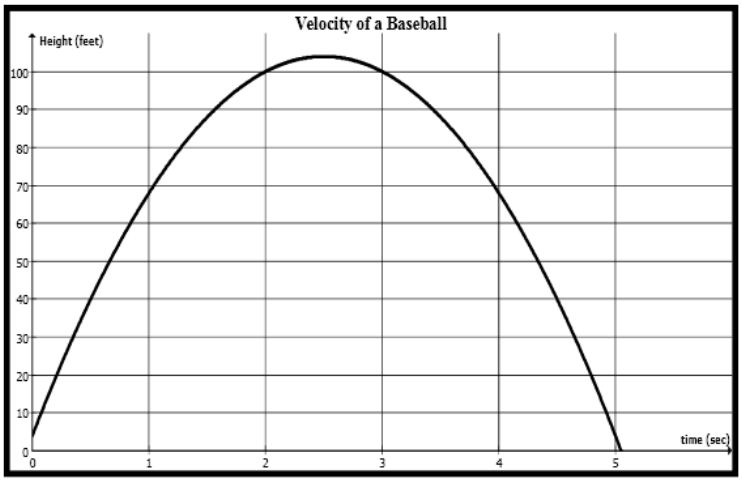


2. $x^2 + 5x = -6$

x					
y					



3. A baseball coach uses a pitching machine to simulate pop flies during practice. The baseball is shot out of the pitching machine with a velocity of 80 feet per second. The quadratic function $y = -16x^2 + 80x + 4$, shown below, models the height of the baseball after x seconds.



A. Approximately, how long does the baseball stay in the air?

B. What is the maximum height that the baseball reaches?

Vertex → 2nd TRACE 3/4

Algebra I – Unit 9: Topic 3 – Solving Quadratics by Graphing Solve for D

Complete the information requested for each quadratic equation.

4. $x^2 + 5x = 6$

Solution(s): _____

Max/Min: _____

5. $x^2 - 18 = 7x$

Root(s): _____

Max/Min: _____

6. $5x^2 + 25x = 0$

x-intercepts(s): _____

Max/Min: _____

2nd TRACE

7. $-x^2 - 10x = 25$

Root(s): _____

Vertex: _____

8. $x^2 + 3 = 0$

x-intercepts(s): _____

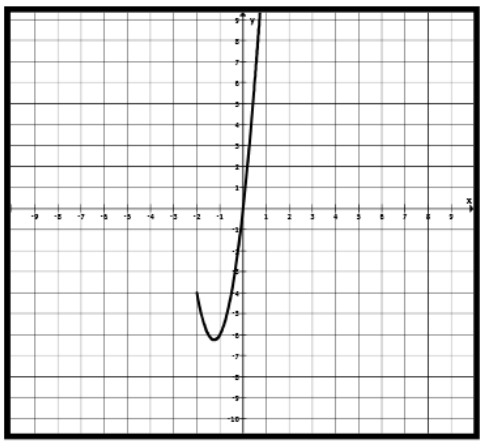
Vertex: _____

9. $9x = -x^2 - 18$

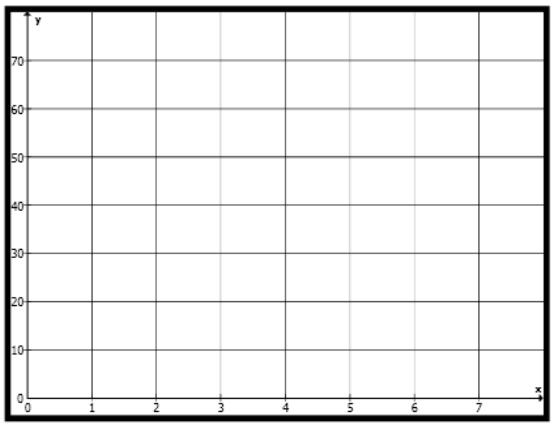
Zeros: _____

Vertex: _____

10. Part of the graph of a quadratic equation is shown below. If the line of symmetry for this quadratic equation is $x = -1.25$, between which two integers will the other part of the graph intersect the *x*-axis?



11. If a goalie kicks a soccer ball with an upward velocity of 65 feet per second and his foot meets the ball 3 feet off the ground, the function $y = -16t^2 + 65t + 3$ represents the height of the ball y in feet after t seconds. Graph the function on the grid below.



12. Approximately how long is the ball in the air?

grades, etc.

GrAdE ChEcK

2 weeks left - 1 quiz, 4 HW grades
Don't forget about tutoring!!!

	2nd	3rd	4th	5th	7th
A's	5	5	3	7	6
B's	6	6	6	6	5
C's	7	6	8	2	4
F's	7	7	12	7	14

Quiz AvEraGes

2nd - 75 ** 3rd - 74 ** 4th - 71 ** 5th - 72 ** 7th - 65

Algebra Simulation

Freshmen (first time taking the Algebra 1 EOC)

You will be blocked for 1st, 2nd, and 3rd periods THURSDAY!!!!! Report to your testing room WITH A WORKING CALCULATOR at 8:55AM.

Take this test seriously. Try your best on every question - make educated guesses on ones you are unsure about.

You will then have a normal day and attend 4th, 5th, 6th, and 7th as scheduled. Go to your normal lunch!

Upperclassmen (you have taken the Algebra 1 EOC previously)

You ARE NOT BLOCKED. Report to all your classes as normal.

If you have 1st, 2nd, or 3rd period Algebra 1 you will go to the library and work on something quietly and productively.