REVIEW - QUADRATICS

AGENDA

Warm-Up
HW Check
Kahoot!
Pre-Test
HW: Review #1-8

REMINDERS

- ALL Late HW & extra credit due by 4:10 TODAY
- Test & Notebook Check Unit 9 Friday

WARM-UP WEDNESDAY©

1. Find all solutions to the quadratic equation, if any.

$3x^2 + 6x = 0$

$3x(x+2)=0$

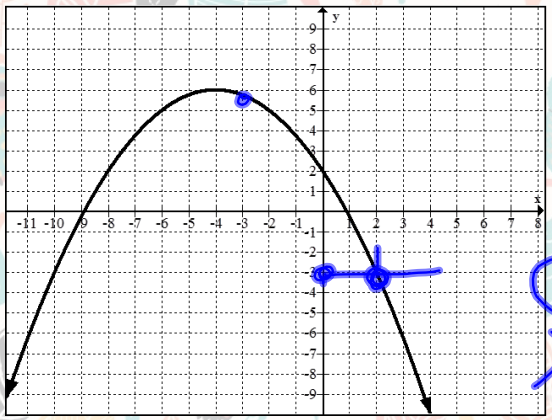
$3x=0 \quad x+2=0$

$y_2=0$

$\{-2, 0\}$

$(-2,0)$ AND $(0,0)$

2. The graph of a quadratic function is shown below.



What is the best estimate of the positive value of x for which this function equals -3?

$y=-3$

A. 6

B. 2

C. -10

D. 9

HOMEWORK CHECK

1. No
2. Yes
3. A. 3 seconds and 11 seconds
   B. 14 seconds
   C. 7 seconds
   D.784 feet
   E. Graph
   F. Domain: $0 \leq x \leq 14$
   Range: $0 \leq y \leq 784$
4. A. ~7.5 feet
   B. 0.8 seconds
   C. 18 feet
   D. 1.5 seconds
5. A. 35 students
   B. $0 \leq x \leq 70$
   C. in between 0 and 70 students will give her a profit
   D. 20 – 50 students
6. B
7. B
8. C

Algebra I - Unit 9: Topic 4 – Analyzing Quadratic Graphs

Practice – Analyzing Quadratic Graphs **No Textbook Correlation**

Name _____ Date _____ Period _____

1. The height in feet above the ground of an arrow after it is shot can be modeled by $y = -16x^2 + 62x + 4$. Can the arrow pass over a tree that is 68 feet tall? Explain why or why not.

2. A superhero is trying to leap over a tall building. The function $h(t) = -16t^2 + 200t$ gives the superhero's height in feet as a function of time. The building is 612 feet high. Will the superhero make it over the building? Explain.

3. A rocket is launched from ground level with an initial velocity of 224 ft/s. The height, h, in feet of the rocket at any given time, t, in seconds is $h(t) = 224t - 16t^2$.

   A. When will the rocket reach a height of 528 feet?

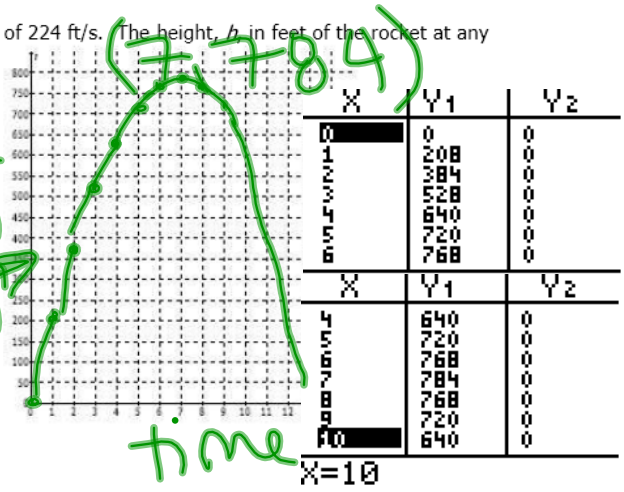
   B. When will the rocket reach the ground?

   C. When will the rocket reach its maximum height?

   D. What is the maximum height of the rocket?

   E. Graph this situation, labeling axes.

   F. State the domain and range of the situation.



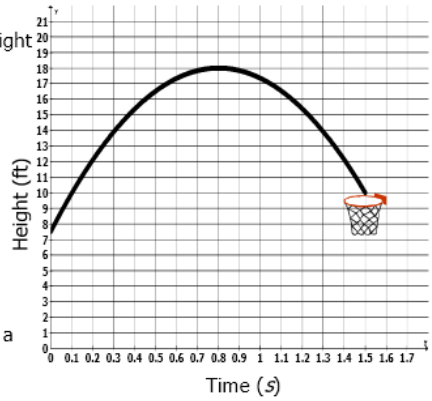
4. A basketball player takes a shot. The graph at the right shows the height of the ball, in feet, starting from when it leaves the player's hands.

   A. Estimate the height of the ball when it is released by the player?

   B. Approximately when does the ball reach its maximum height?

   C. What is the approximate maximum height?

   D. How long does it take the ball to reach the basket, which is set at a height of 10 feet?



Algebra I - Unit 9: Topic 4 – Analyzing Quadratic Graphs

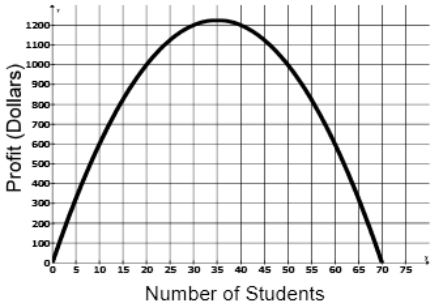
5. The amount of profit a travel agent will make is given by the formula $P = 70n - n^2$, where P is the amount of profit and n is the number of students who will take the trip. The graph at the right illustrates how the profit is dependent on the number of students.

   A. Approximately what number of students gives the travel agent the maximum profit?

   B. What is the domain of the situation?

   C. What is the meaning of this domain?

   D. How many students must take the trip in order for the agent to earn at least $1000?



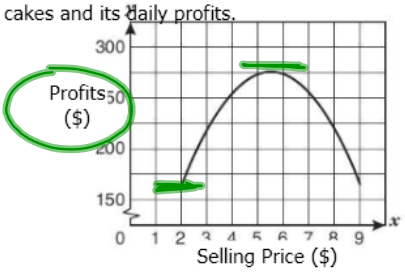
6. The table below shows h, the height in meters of a model rocket, versus t, the time in seconds after the rocket is launched. From the table, what conclusion can be made about the flight of the rocket?

Time in seconds	0	0.5	1	1.5	2	3	3.5	4.25
Height in meters	2	8	12.5	15	16	13	8.8	0

A The rocket reached its maximum height after 2.5 seconds.
B At 0 seconds the rocket was 2 meters off the ground.
C The height of the rocket was 0 meters when it was launched.
D The rocket was in flight for 5 seconds.

7. A bakery determines the following relationship between the price of its cakes and its daily profits. Which is the best conclusion that can be drawn from the graph?

A As the selling price increases, the profits increase
B The profits range from approximately $165 to $275.
C An increase in the price of the cakes results in an increase in the number of cakes sold.
D The maximum number of cakes that the bakery can sell is 275.



8. Michael threw a ball upward from the roof of a 40-foot-high building at an initial velocity of 40 feet per second. The table shows the relationship between the time elapsed and the ball's height above the ground. If the height of the ball is a quadratic function of time, between what times did the ball reach a height of 60 feet?

Time after Michael threw the ball (seconds)	Height of the ball above the ground (feet)
0	40
0.5	56
1	64
1.5	64
2	56
2.5	40

A Between 0 seconds and 0.5 second

B Between 1 second and 1.5 seconds

C Between 0.5 second and 1 second and between 1.5 seconds and 2 seconds

D Between 1 second and 1.5 seconds and between 1.5 seconds and 2 seconds

Review - Quadratics

Kahoot!

Please take out an internet-capable device (cell phone, tablet, etc).

If you do not have one individually, find someone else~~at your table~~ and work as a team. If your sign in name is inappropriate or I can't tell who it is, you will receive no points.

Get a whiteboard marker to show work (you may write on the table) and a graphing calculator to help you.

Algebra I
Unit 9 Review **Name** _____

Find the roots of each of the following equations.

1. $2x^2 - 3x - 14 = 0$

2. $x^2 - 81 = 0$

3. $x^2 + 7x = -10$

4. $6x^2 = 42x$

Find one of the solutions of the following equations

5. $3x^2 - 8x = -4$

A. (-2,0)
C. $\left(0, \frac{2}{3}\right)$
B. $\left(-\frac{2}{3}, 0\right)$
D. (2,0)

6. $x^2 - 10x = -21$

A. (-3,0)
C. (0,7)
B. (7,0)
D. (3,7)

7. Find the quadratic equation (in factored form) that has the given solutions. x : { -7, 2}

A. y=(x+7)(x-2)
B. y=(x-7)(x+2)
C. y=(x+7)(x+2)
D. y=(x-7)(x-2)

8. Which of the following equations represents problem #7 in standard form?

A. $y = x^2 + 9x + 14$
B. $y = x^2 - 5x - 14$
C. $y = x^2 + 5x + 14$
D. $y = x^2 + 5x - 14$