Quadratics

agenda

Warm-Up

HW Check

Notes - 6

Taboo

HW # 1-8

00:00:00

reminders

Algebra EOC is in ONE WEEK!!

Warm-Ups due Thurs

Signed PR due Friday

warm-up

Have out your Defeat the EOC book!

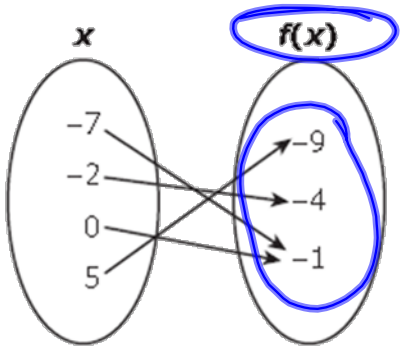
1. What is the range of the function shown below?

A. {-7, -2, 0, 5}

B. {-9, -4, -1}

C. {-9, -7, -4, -2, -1, 0, 5}

D. {-1}



2. A print shop charges a fixed amount per photocopy and gives a 10% discount off the total cost of the photocopies. The total cost is a function of the number of photocopies made. What is the independent quantity in this situation?

F. The total cost of the photocopies.

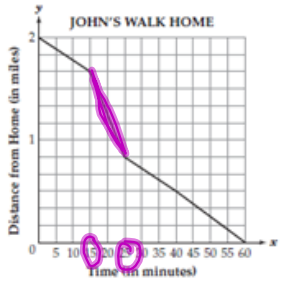
G. The price per photocopy.

H. The amount of the discount.

J. The total number of photocopies made.

Practice

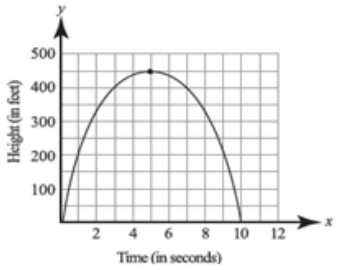
1. John is 2 miles away from his house. The graph below shows the time it takes John to walk home.



Steepest

According to the graph, during what time interval is John walking the fastest? 15-25 min

2. The graph below represents the relationship between the term, in seconds, an arrow is shot upward and its height, in feet.

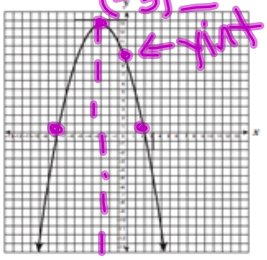


From the time it was shot, how long does it take for the arrow to return to the ground, and what is its maximum height?

A 5 seconds, 450 feet
B 10 seconds, 450 feet
C 10 seconds, 500 feet
D 450 seconds, 10 feet

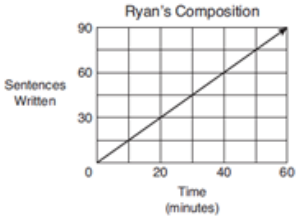
3. The graph of $f(x) = -\frac{1}{2}x^2 - 3x + 8$ is shown below.

Which of the following statements appears to be true?



A The vertex is at (-3, 12).
B The axis of symmetry is x=-3.
C The zeros of the related function are -8, 2, and 8.
D The y-intercept is (8, 0).

4. Ryan is writing a composition for homework. He decides to keep track of the number of sentences he writes compared to the time in minutes he works. The graph below shows the data he collected.



At what rate does Ryan write his composition?

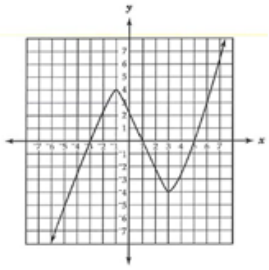
A 0.5 sentence per minute

B 1 sentence per minute

C 1.5 sentences per minute

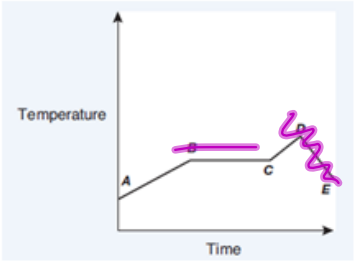
D 2 sentences per minute

5. Look at the function that is graphed below.



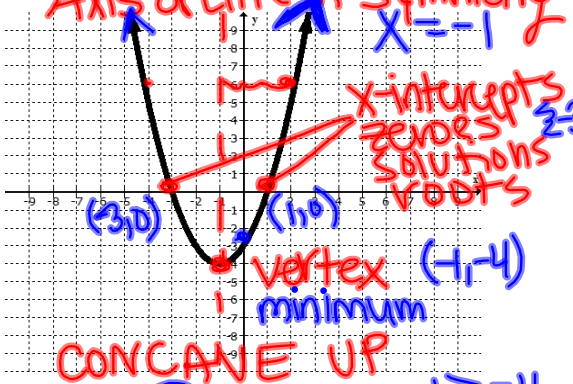
What are the zero(s) of the function?

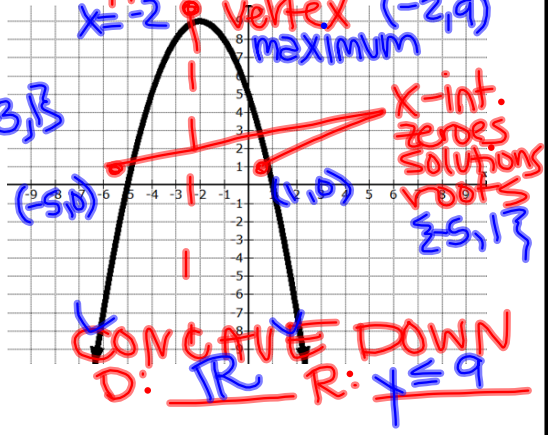
6. The graph below shows the temperature in a town over the course of one day.



During what time period did the temperature increase at the greatest rate? C-D

Unit 9 Quadratics





important vocabulary:

Quadratic Parent Function - $y = x^2$ always

Vertex - turning point (minimum or max) 2ND TRACE

Line (Axis) of Symmetry - x-coordinate of vertex $\leftarrow x = \frac{-b}{2a}$

Concavity - does the parabola open up or down?

X-intercepts - where graph crosses x-axis. TWO ONE NO

Roots -

Solutions - $y_2 = 0$

Zeroes - $ax^2 + bx + c$ (everything on one side)

Standard Form - $b^2 - 4ac$

Discriminant - wider/narrower FAT fractions $y = ax^2 + c$

Compression - slide up or down

Translation -

Quadratic Formula:

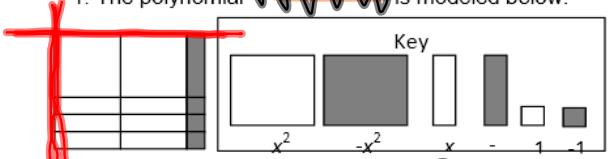
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Factor → unit 8

Unit 9

practice

1. The polynomial [illegible] is modeled below.



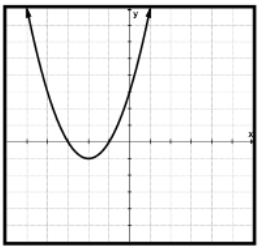
$2x^2+5x-3$

What are the factors of this polynomial?

2. The length of time required by a high-speed printer to print a large set of documents is given by the equation $x^2 - 3x - 54 = 0$ where x is the time in hours. How many hours are required to print the set of documents?

A 2 hr
B 3 hr
C 6 hr
D 9 hr

3. The graph of $y = x^2 + 4x + 3$ is shown below. Use the graph to determine the solution set of the equation.



A {0, -2}
B {1, 3}
C {-1, -3}
D {-3}

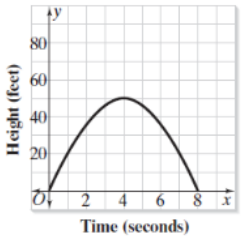
4. The function $y = x^2 - 3$ is transformed to the function $y = x^2 + 2$. How does the graph of $y = x^2 + 2$ compare to the graph of $y = x^2 - 3$?

A Translated 1 unit up
B Translated 4 units up
C Translated 5 units up
D Translated 1 unit down

5. What is the solution set for the quadratic equation $x^2 - 16 = 0$?

A. {4}
B. {-4, 4}
C. {256}
D. {-256, 256}

6. The graph shows the height of a cannonball in terms of the time after it was fired



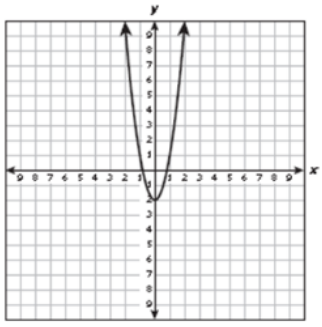
Describe the domain of the function shown in the graph.

Describe the range of the function shown in the graph.

7. What are the x-intercepts of the the graph of the quadratic function $f(x) = 5x^2 + 4x - 1$?

A. 1/5 and -1
B. -1/5 and 1
C. 0 and -1
D. -2/5 and 7/5

8. The graph of $y = 3x^2 - 2$ is shown below.



If the coefficient of x^2 is changed from 3 to another positive number to create a new function, how will the graph of the new function compare with the graph of the original function?

A. The x-intercepts of the new graph will be the same as the x-intercepts of the original function.
B. The vertex of the new graph will be different from the vertex of the original graph.
C. The new graph will be wider or narrower than the original graph.
D. The new graph will open in the opposite direction as the original graph.

Taboo

Object: to score the most points by guessing the most words correctly

Game Play: Each team plays their turn individually. The clue giver will draw a card and try to make their team guess the (math) word, without using the words listed on the card. You may not use gestures or sound effects. If you do either of those things, the other team gets the point. You will have one minute to guess as many words as possible.

Median

Middle

Number

Data

Taboo

Object: to score the most points by guessing the most words correctly

Team 1	Team 2