## Question of the Day

What *is* math?

## On the Docket

Introductions
Concept Review
Quiz
Concept check

# Features of a Function

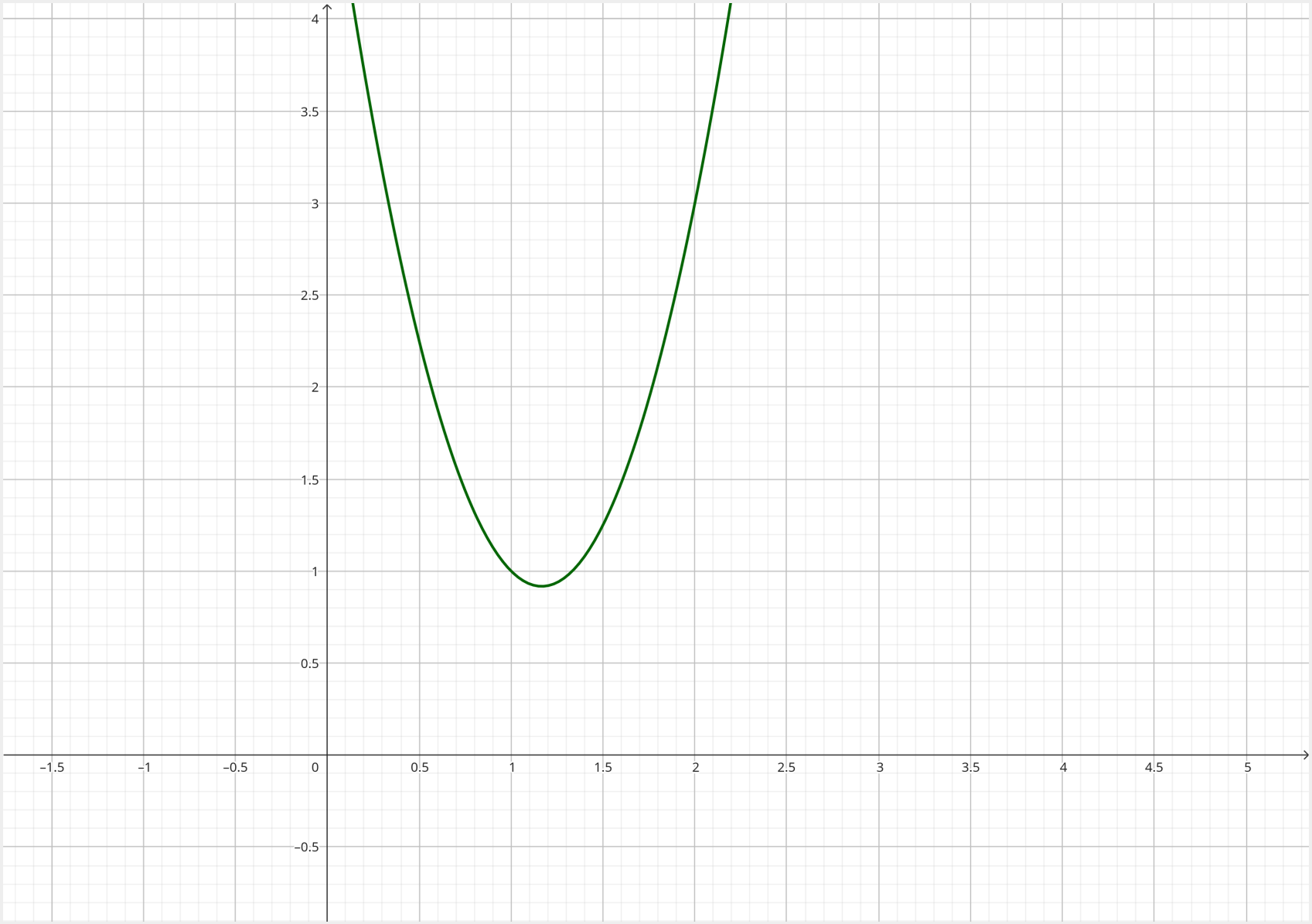
Consider the function

$$z(x) = 3x^2 - 7x + 5$$

Consider the

- Domain of $z$.
- Range of $z$.
- $x$-intercepts.
- $y$-intercepts.
- Does $z$ have local maxima or minima?
- Does $z$ have absolute maxima or minima?
  If so, what and where are they?
- On what intervals is $z$ increasing, decreasing or constant?

# Features of a Function



# Quiz

Given the following quadratic function:

$$g(x) = -2x^2 + 4x + 10$$

a. What is the domain of $g(x)$?
b. What is the $y$-intercept of $g(x)$?
c. What are the $x$-intercepts of $g(x)$?
d. Does $g$ have an absolute maximum or absolute minium? If so, list where it occurs and what it is.
e. Where is $g$ increasing; where is $g$ decreasing; where is $g$ constant?

# Concept Review

- What does "average" rate of change mean?
- What is a secant line between two points?

Given a graph, what does it mean to

- Shift the graph?
- Stretch the graph?
- Rotate the graph?
- Compress the graph?

- What are linear functions?
- What are quadratic functions?

# Zeroes of Quadratics

## Completing the Square

Use completing the square to find the solutions to

a. $x^2 - 6x + 1 = 0$

b. $2x^2 + 6x + 7 = 0$

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

## Quadratic Formula

Use the quadratic formula to find the solutions to

a. $x^2 + 2x = 7$

b. $3q^2 + 11 = 5q$

c. $7t^2 = 6 - 19t$

[1] Credit to Paul's Online Notes