# Mathematics Class Slides

## Bronx Early College Academy

Chris Huson

5 December 2018

# GQ: How does a function's graph relate to its derivatives?

CCSS: HSF.IF.B.4 Interpret features of functions and their graphs 4b.1 Wednesday Dec 5

## Do Now: Differential calculus

1. Take the 1st & 2nd derivatives of $f(x) = x^3 - 6x^2 + 8x$.
2. Sketch the function.
   Challenge: Identify key features, graphically & algebraically.

Lesson: Function graphs, extrema, the 1st & 2nd derivative tests
p. 233- 240

Homework: Textbook exercises 7T p. 239

# GQ: How does a function's graph relate to its derivatives?

CCSS: HSF.IF.B.4 Interpret features of functions and their graphs 4b.2 Thursday Dec 6

## Do Now: Vector review, handout

Lesson: 7.7 Function graphs, extrema at endpoints p. 240-244
Graphing exercises 7U p. 240

Homework: Textbook exercises 7V & 7W p. 242-4

# GQ: How do use calculus to optimize a situation?

CCSS: HSF.IF.B.4 Interpret features of functions and their graphs 4b.3 Friday Dec 7

## Do Now: Vector & derivatives review, handout

Lesson: 7X Optimization problems p. 244-247

Assessment: Pop quiz covering Do Now problems

Homework: IB problem set

# GQ: How does a function's graph relate to its derivatives?

CCSS: HSF.IF.B.4 Interpret features of functions and their graphs 4b.4 Monday Dec 10

## Do Now: Graphing polynomial functions and their derivatives

1. A cubic function $f(x)$ with positive leading coeffient has a local maximum at $x = -3$, local minimum at $x = 5$ and constant term of 12. Sketch $f(x)$, marking the given attributes.
2. Sketch $f'(x)$ and $f''(x)$ on the same axes as $f(x)$.
3. On an $x$-axis below the sketch, sketch a $+/-$ number line to show where the function is increasing and decreasing.

Lesson: 7Y Optimization problems p. 244-247
Application problems
Test Thursday
Homework: Pretest packet, due Wednesday

# GQ: How does a function's graph relate to its derivatives?

CCSS: HSF.IF.B.4 Interpret features of functions and their graphs 4b.4 Monday Dec 10

## Do Now: Vector & derivatives review, handout

Lesson: 7Y Optimization problems p. 244-247
Application problems

Homework: Textbook exercises 7Y p. 248