

# Mathematics Class Slides

## Bronx Early College Academy

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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 coefficient 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.5 Tuesday Dec 11

Do Now: Deltamath review

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.6 Wednesday Dec 12

Do Now: Select pretest problems for priority review

Lesson: Review pretest packet Homework: Study for test tomorrow

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

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

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Do Now: Vector algebra and differential calculus test

Homework: Function graphs handout



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

CCSS: HSF.IF.B.4 Interpret features of functions and their graphs 4b.8 Friday Dec 14

Do Now: Vector & derivatives review, handout

Lesson: 7Y Optimization problems p. 244-247

Application problems

Homework: Textbook exercises 7Y p. 248