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Math 190: Calculus Survey

Instructor: Matt Coles

Email: colesmp@math.ubc.ca

Website:

www.math.ubc.ca/~colesmp/teaching/M190
my website

Labs (5%) } each week / start next week.
Homework (10%) }
Quizzes (15%) - 5 total
Midterm (20%) - Oct. 31
Final Exam (50%)

- No Labs this week
- First HW posted on Monday
- First Quiz Sept. 23.

Clickers: Participation encouraged!

Text: No required text.

Suggested: • James Stewart, Calculus Early Transcendentals (any edition)

- Dale Hoffman, Contemporary Calculus
- free online, link on webpage.

Office: Auditorium Annex (AA) 137.

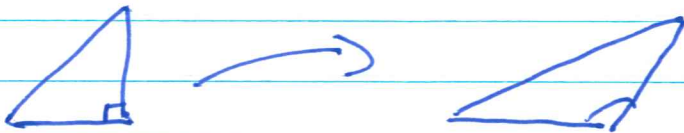
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Why study Math?

- open opportunities / transfer.
- understand world around you.
- finances (personal)
- problem solving skills
 - critical thinking
- required / graduate.
- applications (trees)

Why study Calculus?

- developed 17th century
 - Newton + Leibniz.
- study of change.



- Speed / acceleration.
- many applications science / engineering

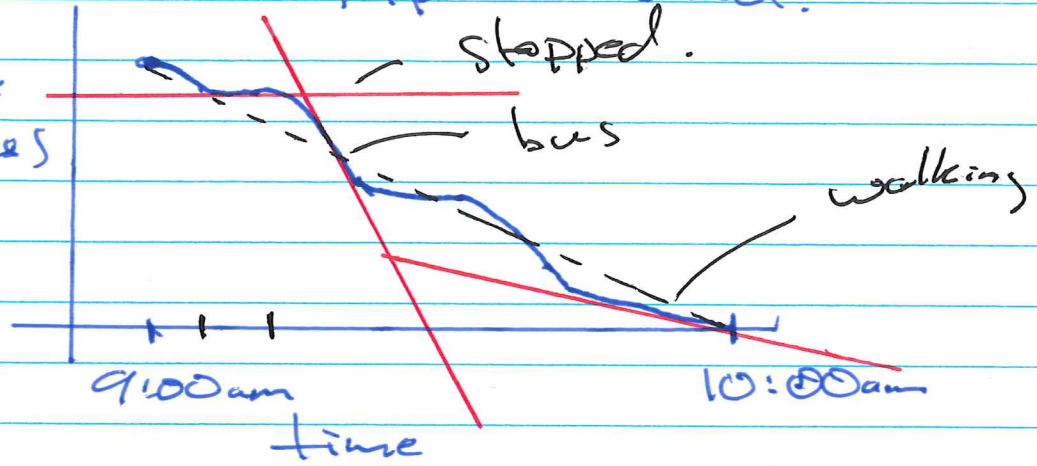
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A survey of ML90.

Part 1:

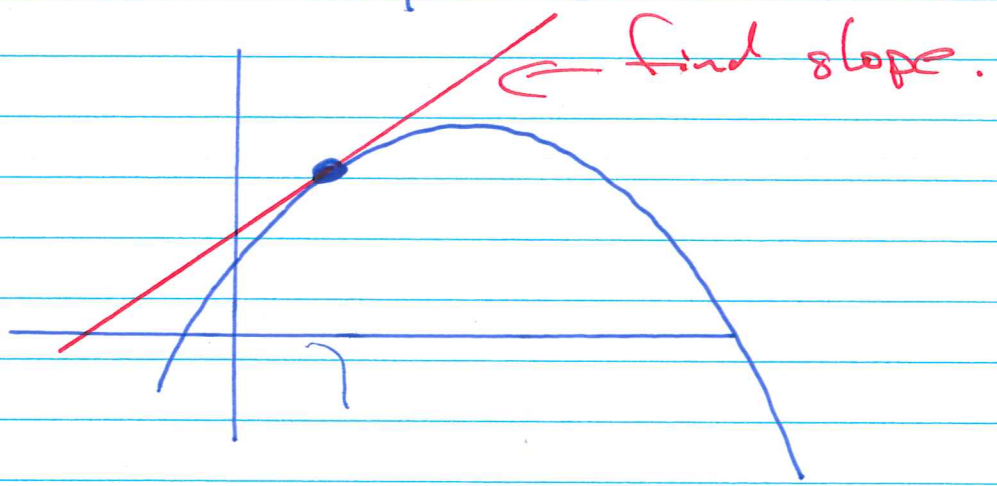
trip to school.

distance from class



The goal of Differential Calculus is to understand "instantaneous velocity".

Or more generally - given a function find the slope of the tangent line.



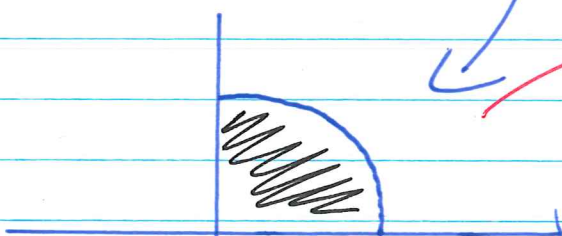
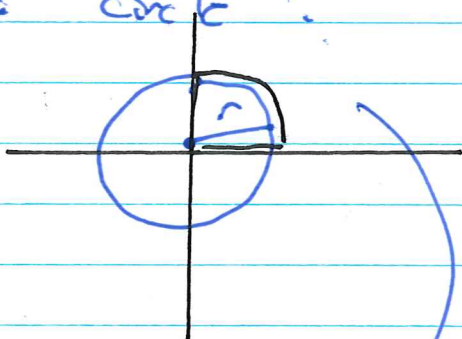
(c)

Part 2: Integral Calculus

Area of Square
 $A_{sq} = s^2$

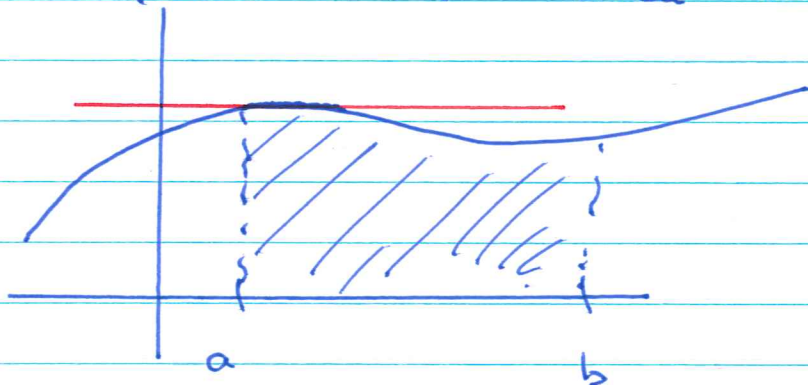


Area of a circle? $A_{circ} = \pi r^2$



Can use Calculus
to find this.

In general, the goal of integral calculus is to find the area under the curve.



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For part 1 we need the derivative.

For part 2 we need the integral.

The remarkable fact is that these two operators are intimately related.