

## Topic #6: Intro to Derivative (Math 31)

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1. Goal:
  - a. Derivative of a function: Concept
2. Review:
  - a. Slope
  - b. Lines from slope and point
3. Informal Definition.
  - a. Tangent line at  $x$ : The line that touches the graph at  $x$  which has the same slope as the graph at that point.
  - b.  $F'(x)$  = the slope of the tangent line at  $x$  of the function  $f$
  - c. Visual examples: From  $f$  to  $f'$ . Evaluate  $f'$  at points
4. Examples.
  - a. Tangent line of a line.
  - b. Tangent line of absolute value (and non-existence of derivative)
  - c. Half circle at some points.
  - d. From picture, where derivative is larger/smaller/zero/undefined.