

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

Objective	<ul style="list-style-type: none"> • Find the derivative of a function • Understanding the meaning of a derivative • Graph derivatives
Materials	<ul style="list-style-type: none"> • Calculator • Internet Access • YouPolls URL • In class handout
YouPolls	<ol style="list-style-type: none"> 1. Go to https://wiki.itap.purdue.edu/display/INSITE/YouPolls 2. Make an account by clicking on the sign up link at the top of the page 3. Follow instructions on creating the poll
Procedure	<ol style="list-style-type: none"> 1) Write $f(x+h)$ and $f(x)$ <ul style="list-style-type: none"> • This is the function given to be derived 2) Compute $f(x+h)-f(x)$ <ul style="list-style-type: none"> • This will give you simplified form • Combine like terms • If h is a common factor of the terms, factor the expression by removing the common factor h. 3) Simplify <ul style="list-style-type: none"> • $[f(x+h)-f(x)]/h$ • This is the basic function for finding the derivative • Need to plug in numbers/function for corresponding variables • As h approaches 0 in the last step, you must cancel the zero factor h in the denominator in Step 3 4) Compute <ul style="list-style-type: none"> • $h \rightarrow 0 [f(x+h)-f(x)]/h$ • Let $h \rightarrow 0$ in the simplified expression 5) Time <ul style="list-style-type: none"> • Lesson- 20-30 minutes • YouPolls sign up- 5 minutes • Work time- 10 minutes??
References	<ul style="list-style-type: none"> • http://www.math.wvu.edu/~hjlai/Teaching/Tip-Pdf/Tip1-5.pdf • https://wiki.itap.purdue.edu/display/INSITE/YouPolls