

AP Calc Warm Up – 10/5/10

Name: _____ Period: _____

- 1) What is instantaneous velocity?

- 2) Look at your notes from yesterday and find the limit that tells us the derivative of a function. Copy that limit here.

- 3) The distance of a car from a stop sign in meters is described by the function $f(x) = x^2$ where x represents seconds. Find the INSTANTANEOUS velocity of the car at $x=3$ using the limit definition of the derivative that you wrote in 2).

Limit Definition of the Derivative

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Concept – Students will be able to set up a limit definition of instantaneous rate of change and will know the meaning of derivative.

Let's rewrite the limit definition of the derivative:

Now, consider the function $f(x) = x^2$

Find $f'(-1)$ [that is the same as saying find the slope of the function at $x=-1$]

Find $f'(-3)$ [that is the same as saying find the slope of the function at $x=-1$]

Now, consider the function $f(x) = x^2 - 2x + 5$

Find $f'(2)$ [that is the same as saying find the slope of the function at $x=2$]

Find $f'(-1)$ [that is the same as saying find the slope of the function at $x=-1$]

AP Calc – Exit Slip – 10/5/10

Name: _____

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- 1) Set up AND EVALUATE the limit definition of the instantaneous velocity of a ball whose is described by the function $f(x) = x^2 - 4x + 4$ at $x=4$.