Precalc – Warm Up – 2/1/11

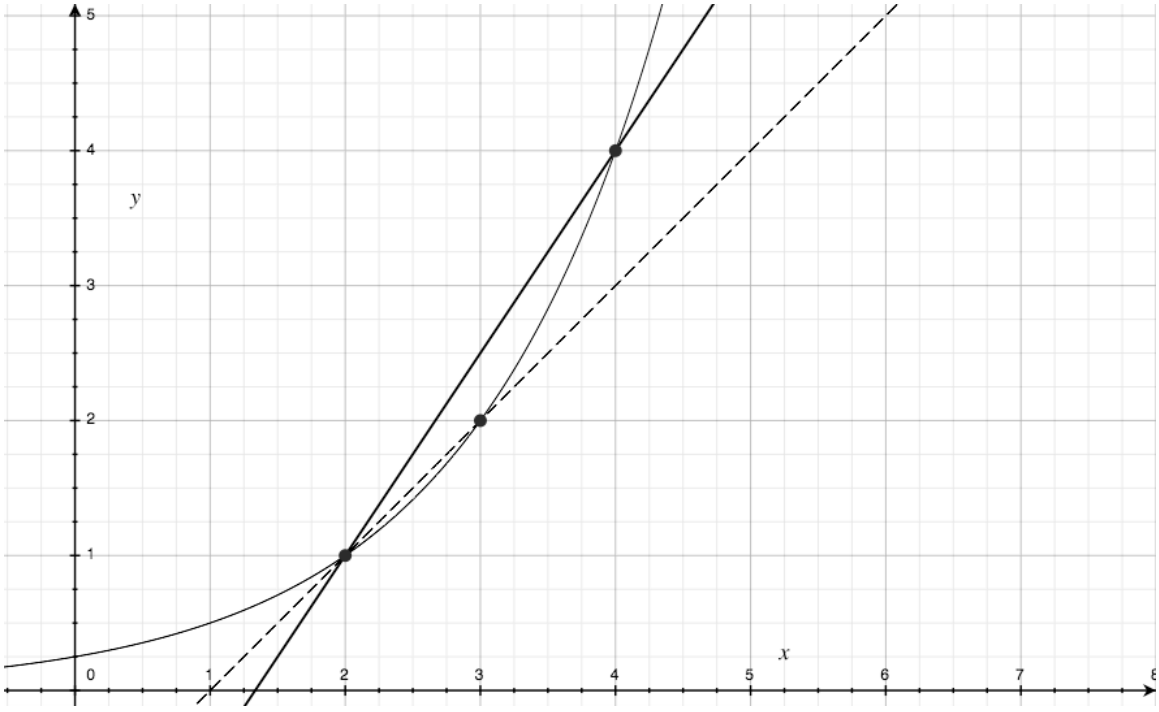
Name:_____ Period:_____

1) Estimate the instantaneous rate of change of the following function at x=4

Precalc – Estimating Instantaneous Rates – 2/1/11

Name:_____ Period:_____

Students will be able to estimate velocity for an instant in time given the equation for distance vs. time.



Considering the above graph, which line (the solid line or the dashed line) is a better estimate for the instantaneous rate of change of the curve at x=2?

What about at x=3?

Estimating instantaneous rates of change using an equation.

Imagine that a race is run in straight line. One runner's distance from the start is described by the function

$f(x) = 2x^2$

Where x is measured in seconds and $f(x)$ is measured in meters.

Estimate the runner's velocity at x=4.

Practice:

Imagine that a race is run in straight line. One runner's distance from the start is described by the function

$f(x) = 2x^2$

Where x is measured in seconds and $f(x)$ is measured in meters.

1) Estimate the runner's velocity at x=2.

2) Estimate the runner's velocity at x=2.5.

A car approaches a stop sign. The car's distance from the stop sign is described by the function

$f(x) = 2^{(-0.1x+10)}$

Where x is measured in seconds and $f(x)$ is measured in meters.

1) Estimate the car's velocity at x=3.

2) Estimate the car's velocity at x=4.

3) Would you say that the car's velocity is increasing or decreasing? Why?

Precalc – Exit Slip – 1/31/11

Name:_____ Period:_____

Usain Bolt's distance from the start in the 100m dash is described by the function

$f(x) = x^2$

where x is in seconds and $f(x)$ is in meters.

Estimate his velocity at 6 seconds.