

Rates of Change of Polynomial Functions

A trip down memory lane...



In this lesson, we will solve rate of change problems that involve polynomial functions.

You have already studied the concepts of average and instantaneous rate of change in the past. This lesson will serve as review and an opportunity to apply some of our knowledge about polynomial functions.

The following problems are to be solved on a separate page.

Problem #1

A rock is thrown off a cliff. The height of the rock above the ground, in metres, t seconds after it is thrown can be modeled by the following function:

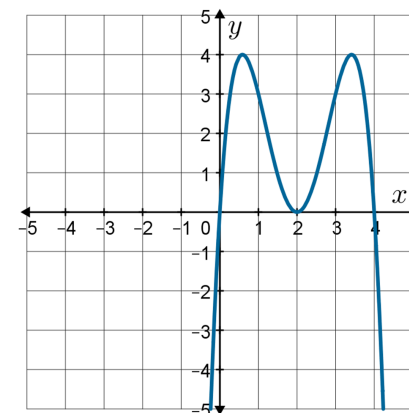


$$h(t) = -5t^2 + 10t + 120$$

- Determine the rock's average velocity from 2 seconds to 5 seconds.
- Determine the rock's instantaneous velocity 3 seconds after it is thrown.

Problem #2

The graph of a polynomial function is shown on the right.



- Estimate the instantaneous rate of change at $x = 2$ by inspecting the graph.
- Estimate the instantaneous rate of change at $x = 3$ by first finding the equation of the function.