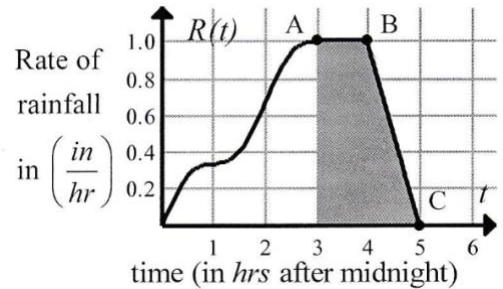


LESSON 8.1: Rate Graphs & Average Value of a Function

Interpretation of "Rate Graphs"

Examples: The graph at right models the rate of rainfall in inches per hour from midnight until 6:00am during a tropical rainstorm.



- Write a complete sentence to explain what Point A on the graph represents. Include the units in your answer.
- What is the slope of the graph between Point A and Point B?
- Write a complete sentence to explain the meaning of your answer in #2. Include numbers and units in your answer.
- What is the slope of the graph between Points B and C?
- Write a complete sentence to explain the meaning of your answer in #4. Include numbers and units in your answer.
- Find $\int_3^5 R(t) dt$.
- Write a complete sentence to explain the meaning of your answer in #6. Include numbers and units in your answer.
- Approximate the value of $\int_0^6 R(t) dt$ using geometric regions. Show computations.
- Write a complete sentence to explain the meaning of your answer in #8. Include numbers and units in your answer.

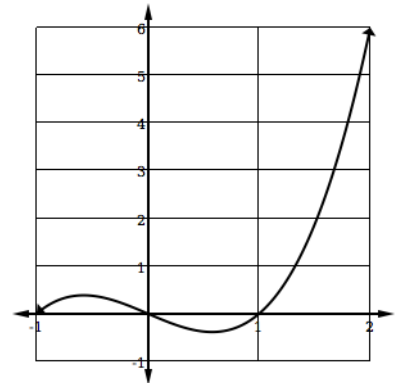
Average Value of a Function

The **average value** of a function represents its average “height”.



Examples:

1. Find the average value of $f(x) = x^3 - x$ on the interval $[0,2]$ without using a calculator.



2. Use your calculator to find the value of c in the interval $[0,2]$ where $f(c) =$ the average value you found in #1.