Closes Tue: Webassign Intro
Closes Thu: Supplement 1-3
                Supplement 4

TODAY: Supplements 1-4

Definitions:

A diagonal line is a line through the origin.

A secant line is a line through two points on a curve.

Slope of a line = $\frac{RISE}{RUN} = \frac{y_2 - y_1}{x_2 - x_1}$

Note: When finding a slope/rate, always draw the line and pick **any** two easy to read points that are far apart.

Entry Task: Get out your lecture graph that goes with Supplement 1 and 2

1. Draw a diagonal line that goes through the distance graph at t=10. Find the slope.

2. Draw a secant line that goes through the graph at t=5 and t=10. Find the slope.

From the lecture packet:
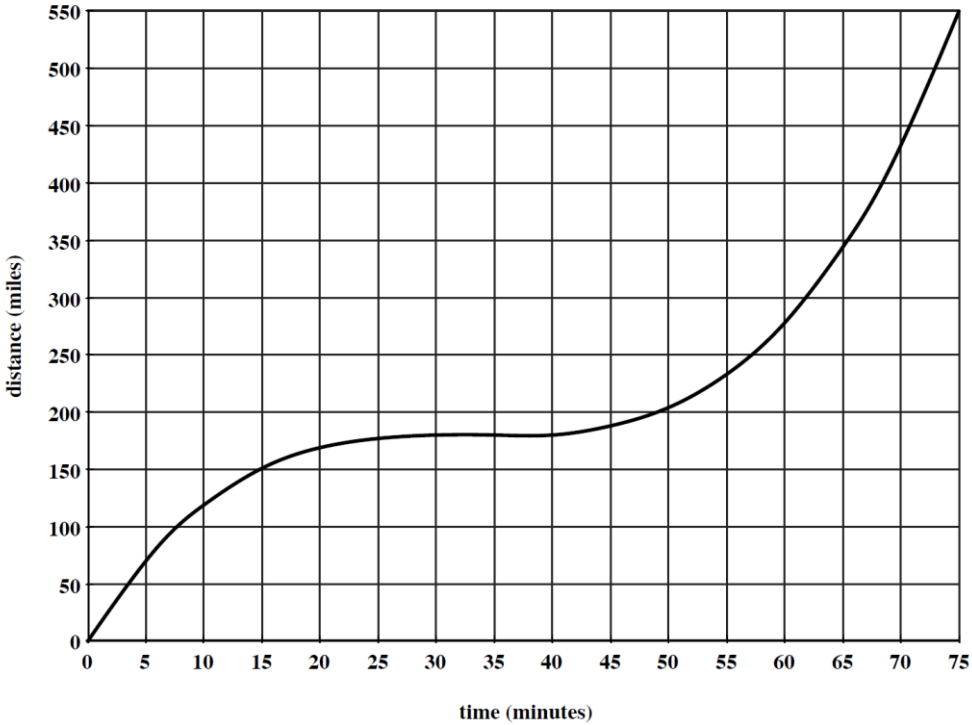
Overall average rate:

ATS=average trip speed = $\dfrac{Total\ Dist}{Total\ Time}$

= slope of a diagonal line

Incremental average rate:

AS = average speed = $\dfrac{Change\ in\ Dist}{Change\ in\ Time}$

= slope of a secant line

Important Note:

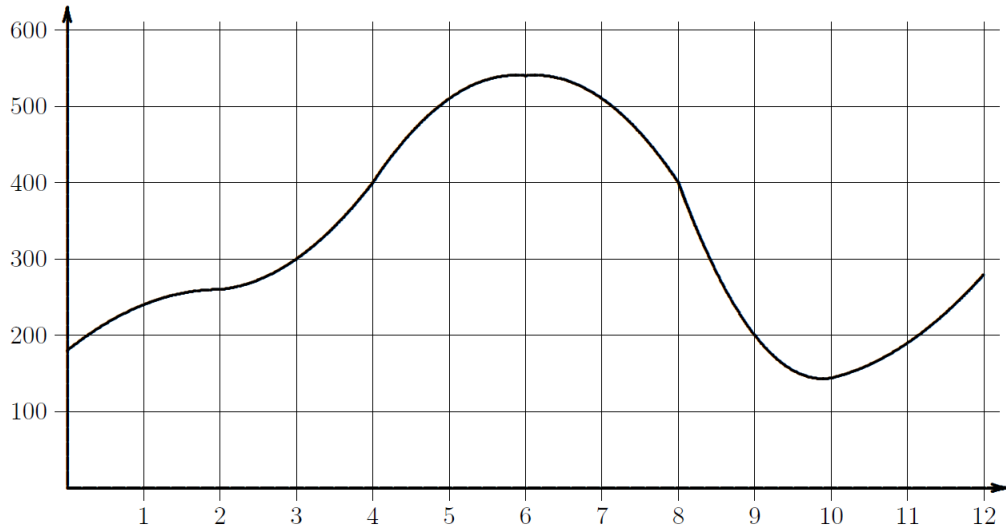**Given a total distance graph.**

Get out your ruler and start drawing
lines and computing slopes.

Given an increment or rate graph.

Put the ruler away, read values off the
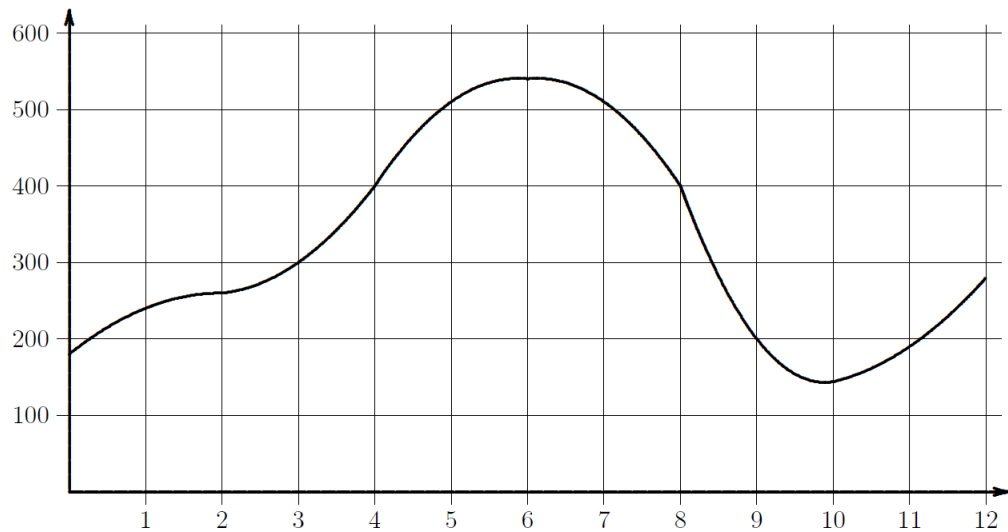graph and make appropriate
conclusions.

Supplement 3-4 (Reference Lines)

Temp vs. time for a chemical reaction.

1. Find the **overall** rate of change after 9 minutes?

2. **How fast** does the temp rise, on average, during the 3-min interval beginning at t=4 min?

Temp vs. time for a chemical reaction.

3. Find a time at which overall rate of change of temp is 25 deg per min.

4. Find a two-minute interval during which the incremental rate of change is 10 deg/min.

5. Find a three-minute interval during which the temp rises by 150 deg.

Summary:

Overall Rate = from wherever the graph starts (not necessarily the origin)

If you are given a rate or increment and you want to find a time, then draw a reference line!