

Related Rates

Let's go over the **strategy** of solving the related rates problems:

Before we begin, you might want to read pages 59 through 62 to recall the Principles of Problem Solving.

- Step 1 Read and analyze the problem.
- Step 2 Draw a diagram if possible.
- Step 3 Introduce notation. Assign symbols to all quantities that are functions of time.
- Step 4 Express the given information and the required rate in terms of derivatives.
- Step 5 Write the equation that relates the various quantities of the problem. If necessary use the geometry of the situation to eliminate one of the variables by substitution.
- Step 6 Use the Chain Rule to differentiate both sides of the equation **with respect to t** .
- Step 7 Substitute the given information into the resulting equation and solve for the unknown rate.

Now, form a group of three and work a couple of problems.