If a variable appears in a word problem then it measures something. For each variable, you are required to write a one sentence description of what it measures. Here are a few tips.

- **Be specific.** It is never enough to write things like “$V$ is the volume,” or “$a$ is the length.” Instead, state that $V$ is the volume of something in particular. State that $a$ is the length of something specific.

- **Never** use a pronoun. Any sentence with the word “it” will probably score negative points.

- A numerical value is never a suitable description of a variable. Variables vary. Numbers are constant.

- Units are never a suitable description of a quantity.
  For example, writing “$V$ is ft$^3$” will get zero credit for communicating what $V$ measures.

- An object is never a quantity.
  For example, “$x$ is the car” gets zero credit. (Perhaps $x$ is the position of the car.)

- Many variables measure the positions of moving objects. Sentences about position must clearly state that:
  
  1. The measurement is **from** a specific reference point.
  2. The measurement is **to** a specific point on the moving object.

  Also, the two points must lie on the line of motion.

  For example, **8-2(b): Related Rates 1**, Problem 4, has the sentence
  
  “$y$ is the distance **from** the base of the pole **to** the tip of the shadow.”

- Angle measurements are harder to describe. In general, the correct description of an angle must clearly state that the angle is between two **lines**, and both lines must be clearly described.

  For example, in Problem 5 from **8-2(b): Related Rates 1**, the angle $\theta$ could be described as
  
  “the angle **between** the base of the triangle and the hypotenuse.”
• There are some circumstances where special vocabulary for angles is appropriate. For example, **angle of elevation**. Use these with care. If you want to write about an **angle of depression** here is a

**Bad sentence:** The angle of depression.

And here is a

**Good sentence:** The angle of depression from the observer to the object.

• Although your homework and exams will require written sentences, it is often a good idea to communicate positions, lengths, distances and angles by correctly labeling a diagram. If you do this, be sure that you clearly indicate all of the required “from”, “to” and “between” information in your diagram.

For example, suppose you want to label some of the distances and angles in this figure:

Here’s an example of good and bad practices.

**Bad**

**Good**