



## Personal Tutors Chapter 7

### Personal Tutor Activity 7.1 – Angle of Elevation

- 1. Apply** As an entry-level engineer, Tom is working with his company’s surveyor. Tom has been asked to calculate the angle of elevation between the ground and the top of the electric pole once it is installed. The electric pole is approximately 40 feet long and will be buried about six feet in the ground. Tom’s surveying instrument is approximately 5.25 feet above the ground and he is located approximately 20 yards away from the electric pole. Calculate the angle of elevation.
- 2. Starting Hint** Draw a diagram to represent the problem. A right triangle is needed to work this problem. Write out the equation first, then write the numbers you know underneath each part.

### Personal Tutor Activity 7.2 – Simple Interest

- 1. Apply** Jill is the on-site construction engineer for the building of a new hotel. She has received cost estimates for materials from two vendors. The costs are comparable from each vendor, but their interest rates are different. Each vendor has agreed to waive payments until construction is complete, six months after the supplies are delivered. Vendor A has a supply cost estimate of \$2000 and an interest rate on its credit plan of 8%. Vendor B has a supply cost estimate of \$1800 and an interest rate on its credit plan of 15.5%. Jill has to select a vendor based on the final cost, including interest, at the end of six months. Which vendor should Jill use, based on the information provided?
- 2. Starting Hint** Write out the equation first, and then write the numbers you know underneath each part. Remember that the final cost includes the supply cost estimate plus the interest accrued in six months.