



Personal Tutors Chapter 11

Personal Tutor Activity 11.1 – Construct a Scale Drawing

- 1. Apply** A biomedical engineer is designing a new display panel for a new automobile model. The current size of the display panel in the automobile is 12 inches (length) by 9 inches (height). The testing model of the new car is approximately one-third the size of the actual car. Given the reduction of size for the testing model, determine the scale that the engineer should use to create a testing model of the display. Then calculate the dimensions of the testing display.
- 2. Starting Hint** Determine the general scale from the full-sized car to the testing model.

Personal Tutor Activity 11.2 – Use the Hinge Theorem

- 1. Apply** A biomedical engineering undergraduate student is working at an internship in a physical therapy rehabilitation clinic. One of the patients with which the student is working has recently been fitted with a prosthetic arm. When first fitted with the arm, the range of motion was minimal, approximately 25 degrees. The engineering student has been tasked to determine what the patient’s goal should be regarding range of motion. Discuss the constraints and criteria that should be considered in suggesting a goal for the patient.
- 2. Starting Hint** Consider not only the prosthetic arm in setting the goal, but the patient’s other arm as well.