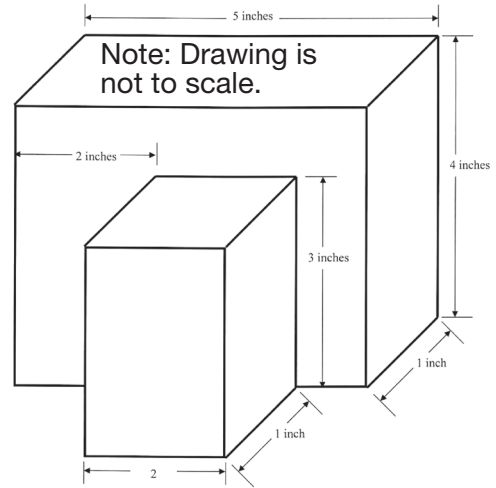




Personal Tutors Chapter 4

Personal Tutor Activity 4.1 – Describe and Draw

1. Apply A box composite is required for the shipping of a new design. The following picture depicts the box in its completed, shippable form. Draw an orthographic sketch of the box, showing the top, front, and right side views of the box. This sketch will be used by the manufacturing staff to create the individual pieces that make up the box.



2. Starting Hint Determine which views of the object are the most critical to its design. These views should be selected for the orthographic sketch. Often, engineers will use the top, front, and side (right or left) views.



Personal Tutors Chapter 4

Personal Tutor Activity 4.2 – Determine the Scale

- 1. Apply** An engineer is working on the efficiency of a specific wingspan for a new aircraft. This design has three alternatives for the wing design. The wing that is most likely to be used on the aircraft is approximately 48 feet long at the widest point on the aircraft. The aircraft is approximately 56 feet in length. The model must be tested in a wind tunnel that is approximately 2 feet in diameter at the narrowest point. The model of the aircraft must have a minimum of 4 inches clearance in all directions while being tested in the wind tunnel. Assuming that the model is approximately 7 feet in length, what scale would be the most appropriate to use in building the model?
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- 2. Starting Hint** Identify the constraints for the testing phase of the design process. These constraints will often drive the decision of a specific scale for the model.