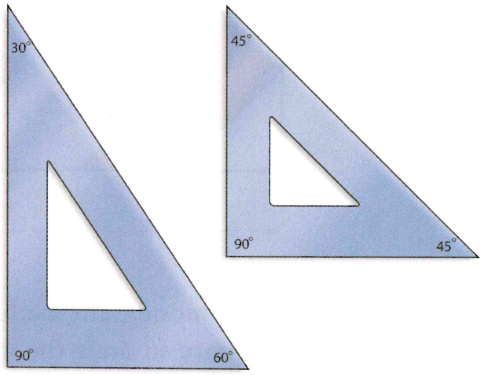
Chapter 2

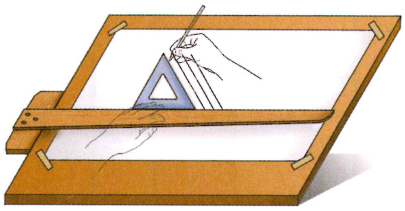
Inclined Lines

Set Squares

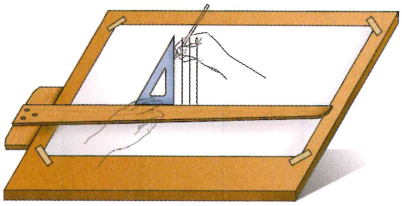
Set squares are used to draw lines at 30, 45, 60 and 90 degrees. They are made of clear plastic so that you can see the drawing underneath. You will need two: a **45°** and a **30°/60° set square**.



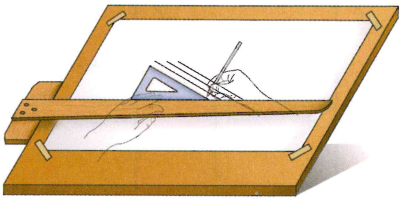
By holding a set square against the tee square as shown in the figure below you can draw lines at 45°, 60° and 30° to the horizontal. The production of a technical drawing can be speeded up considerably by using set squares to obtain these angles.



Lines at 45°



Lines at 60°

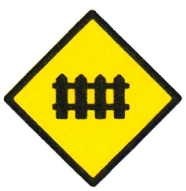


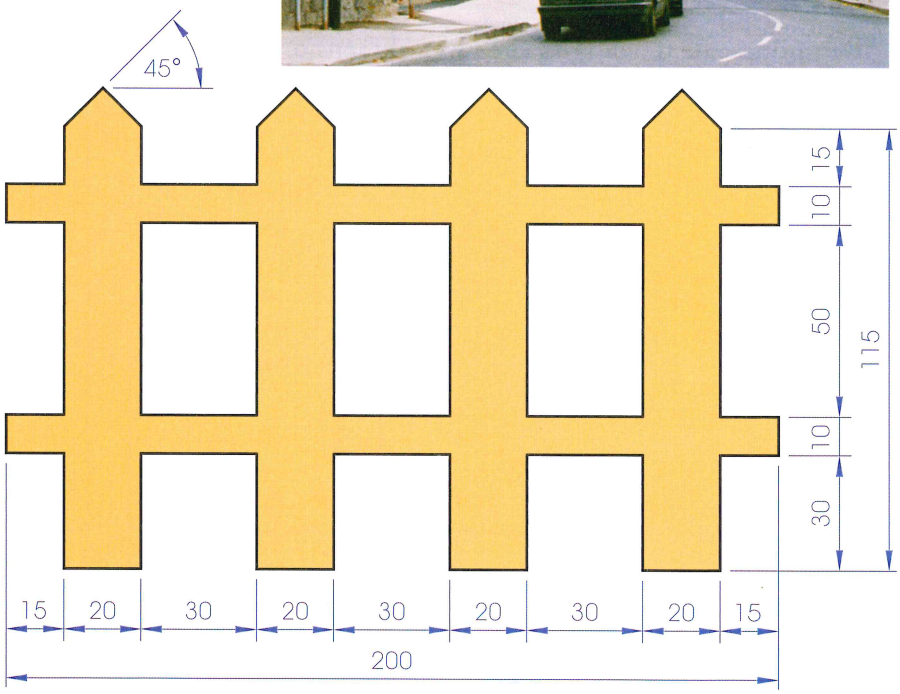
Lines at 30°

Exercises

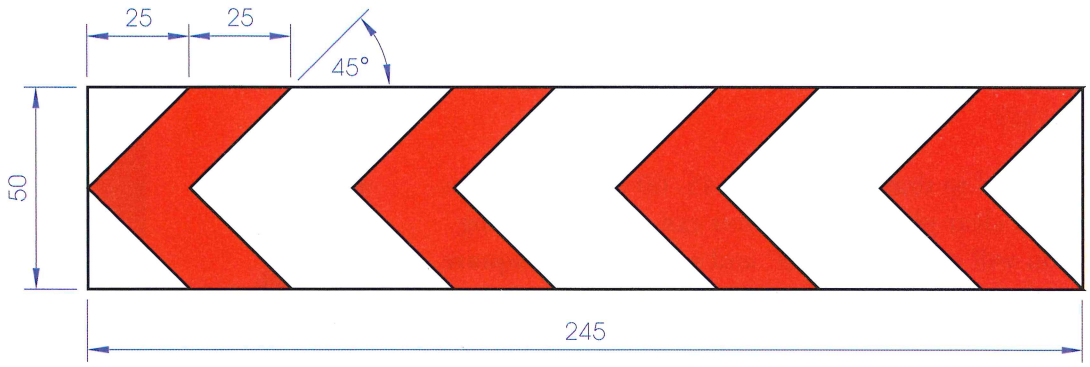
1. The **Level Crossing Ahead** road sign is shown across. A drawing of a portion of this sign is shown in the figure below.

Reproduce this drawing to the given dimensions, using a **45° set square** to draw the inclined lines.

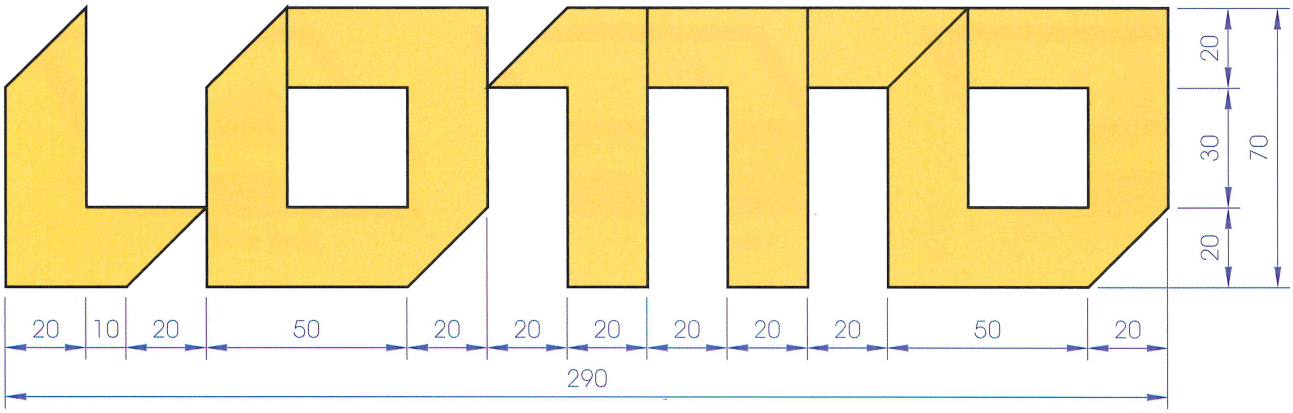




2. Make a full-size drawing of the **road direction sign** shown in the figure below. Use a **45° set square** to draw the inclined lines.



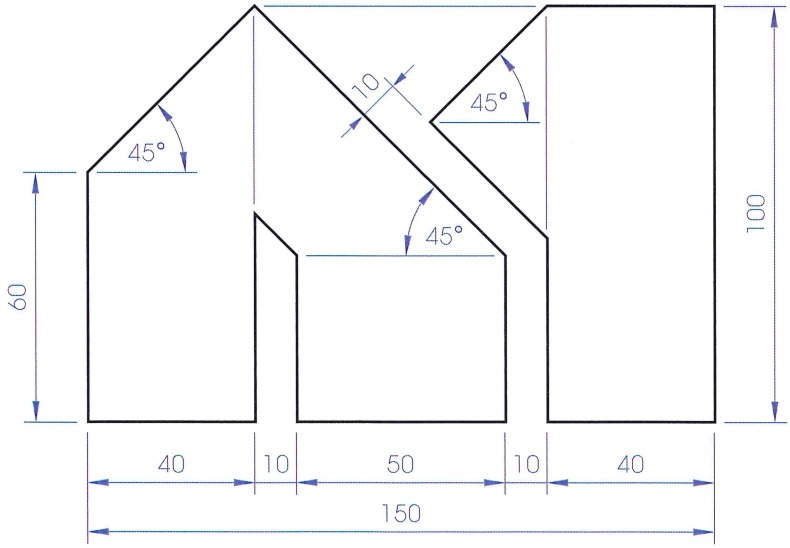
3. The **Lotto** sign is a monogram made up of a series of horizontal, vertical and 45° lines. Copy this sign using a **45° set square** to draw the inclined lines.



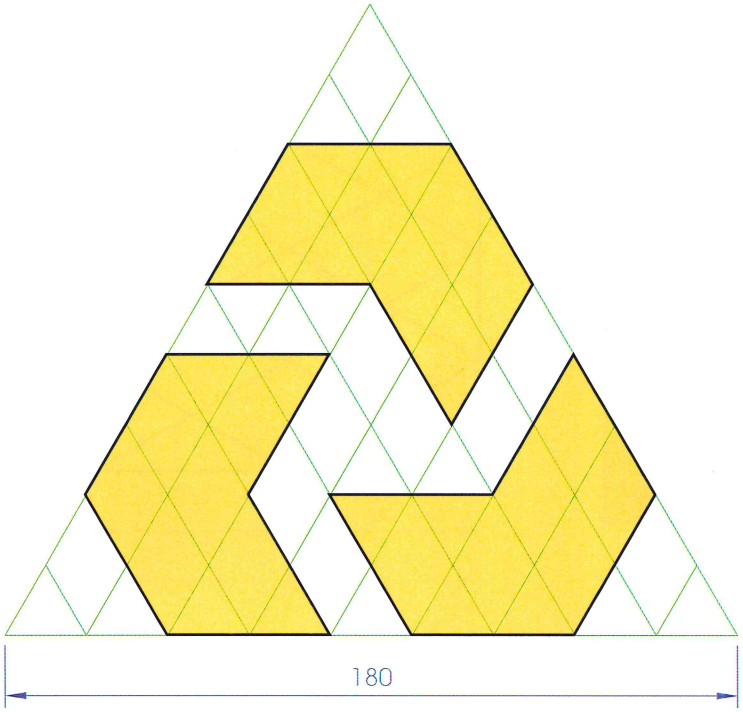
4. Shown below is a drawing of part of the logo for **McMahon's** builders suppliers. *All the inclined lines are drawn at an angle of 45°.*

Reproduce the drawing to the given dimensions.

McMahon
Your Building Partner

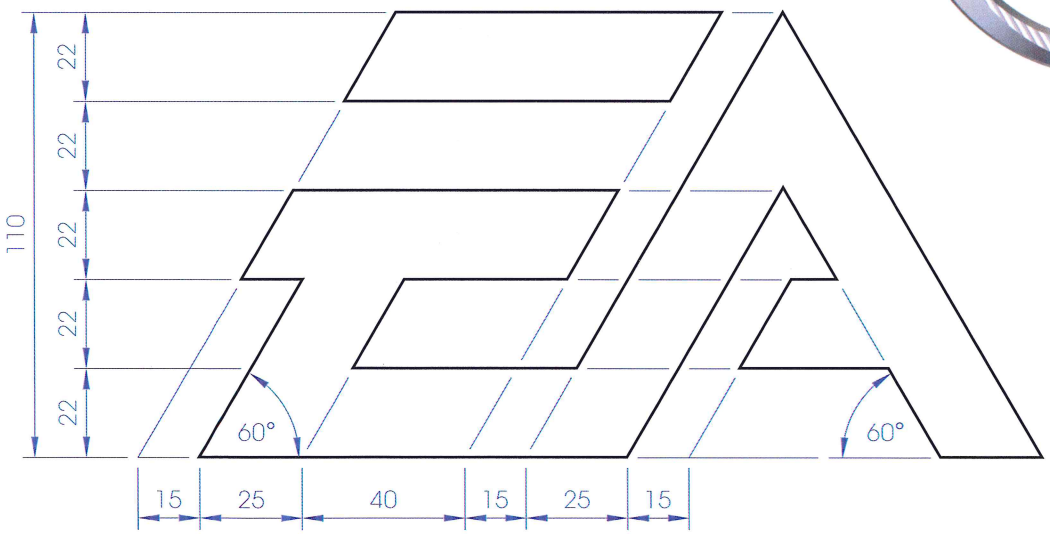


5. The **Ulster Bank** logo shown below is drawn on a grid where all angles are 60°. Using the measurement given and your **60° set square** to draw inclined lines, draw the logo.

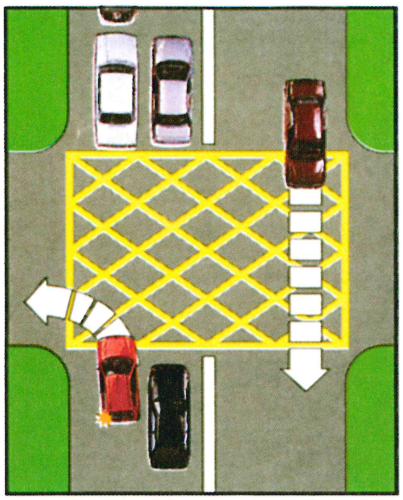


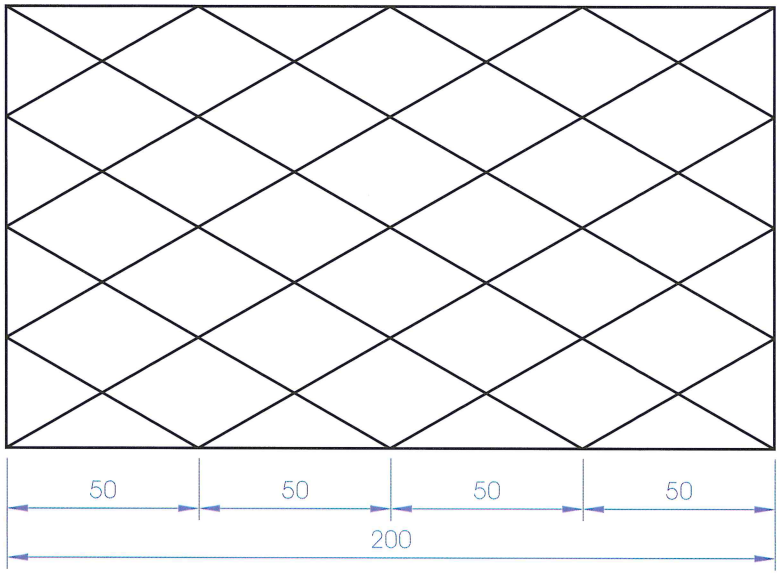
6. The figure below shows a drawing of the logo used by **EA Games**.

Make a drawing of this design, showing all construction lines.

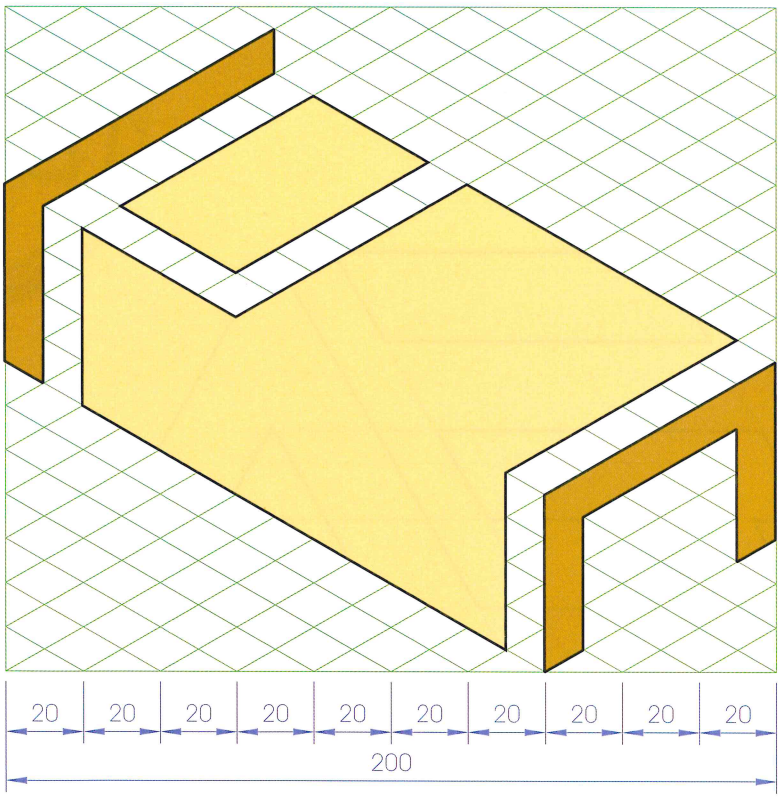


7. A drawing of a **box junction** is shown below. Reproduce the drawing to the given dimensions, using your **30° set square** to draw the inclined lines.



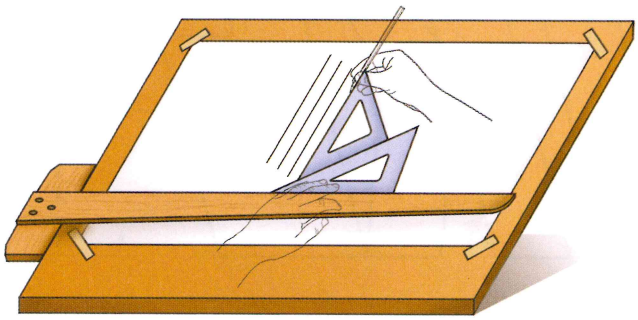


8. A sign for an **hotel** is shown in the figure below. It is drawn on a grid where all angles are 30°. Reproduce the drawing to the given dimensions. Use your **30° set square** to draw the inclined lines.

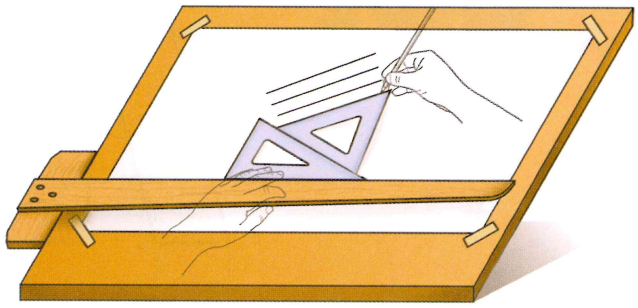


Drawing Angles with Set Squares

The 30°/60° and 45° set squares can be used to obtain certain inclined lines other than those at 30°, 60° and 45°. The drawings below show how the two set squares can be combined to obtain angles of 75° and 15°.



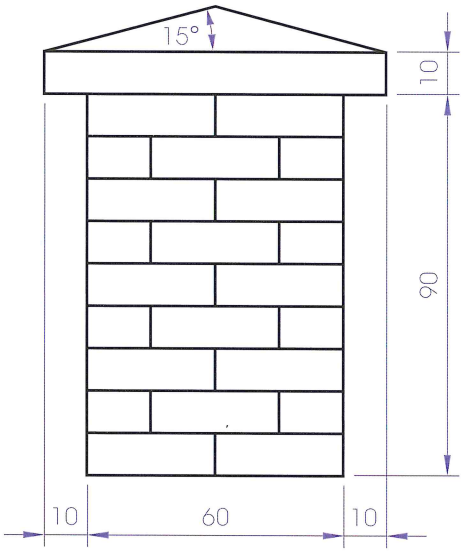
Lines at 75°

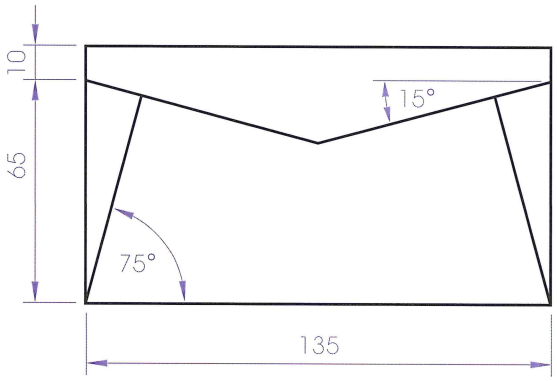


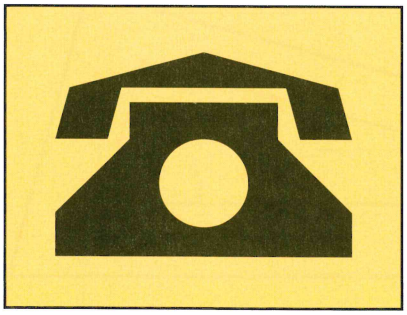
Lines at 15°

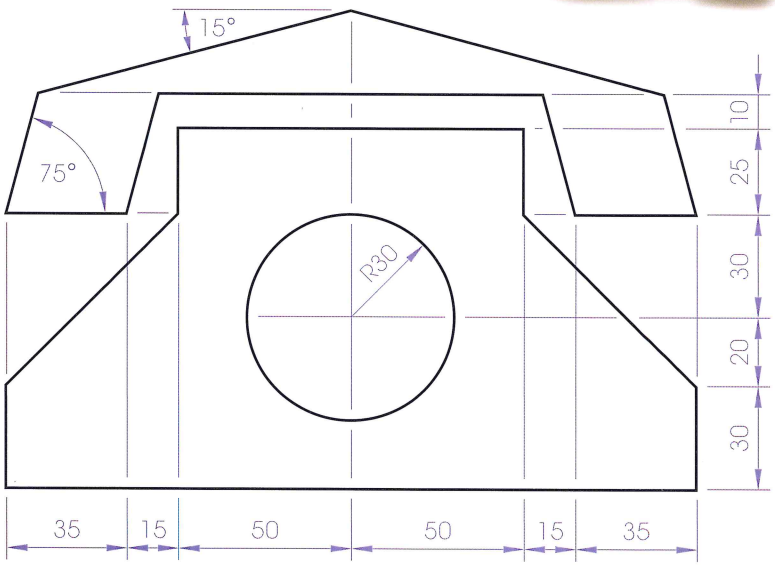
Exercises

1. Shown below are three drawings that contain lines drawn at 15° and 75° respectively. Reproduce each of the drawings to the given dimensions. For each drawing, combine the two set squares to draw the sloping lines at 75° and 15°.

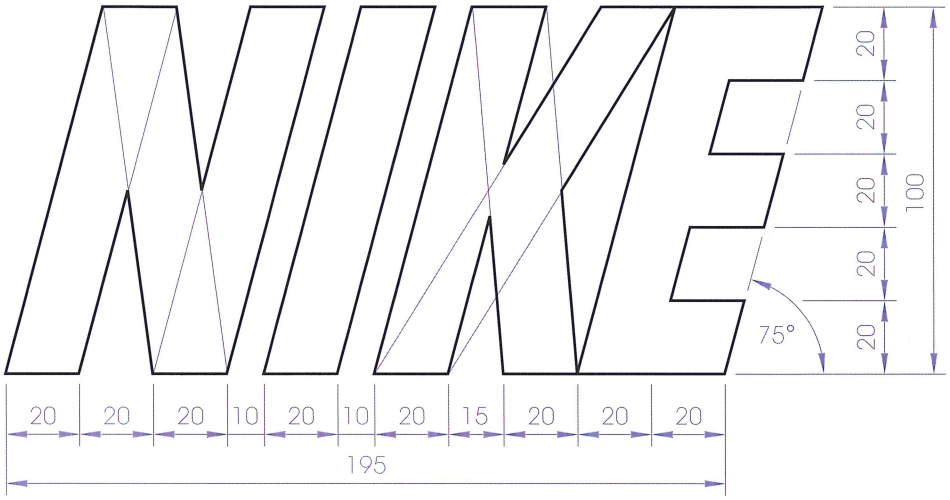




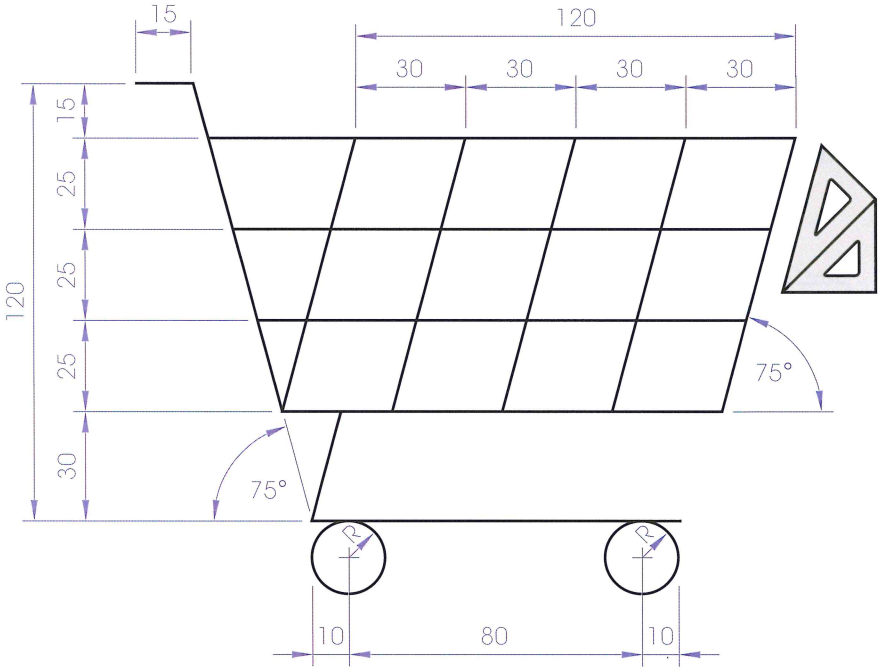




2. Reproduce full-size the drawing of the **Nike** monogram shown below. Combine the 45° and 30°/60° set squares to draw the lines at 75°.



3. Reproduce the drawing of the **shopping trolley bay sign** shown in the figure below.



4. Reproduce the drawing of the **staple gun** shown in the figure below to the given dimensions.