



PROTECTING YOURSELF, THE OLD FASHIONED WAY

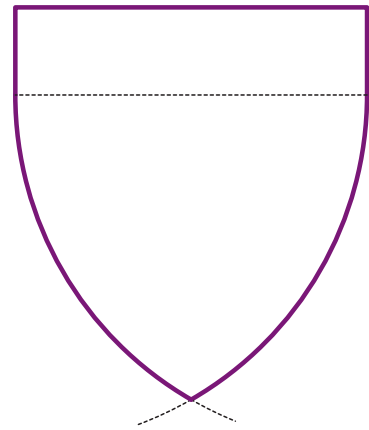
Areas of interaction:
Human ingenuity



Throughout history, warriors have used shields for protection in battle. Shields have been used by many civilisations, including the Egyptians, the Persians, and the Romans. Shields can be made from materials such as wood, animal hide, leather, or metal.

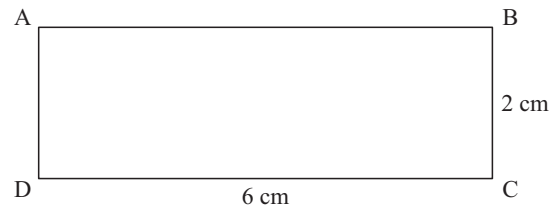
There are a number of different methods used for marking out the shape of a shield. We shall look at three of them, using a ruler and a compass.

All three designs involve a rectangular shape at the top, connected to circular arcs which meet at a base point.

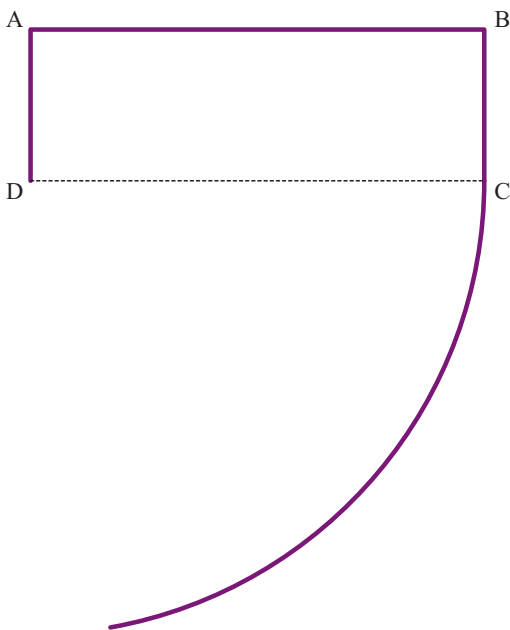


Method 1

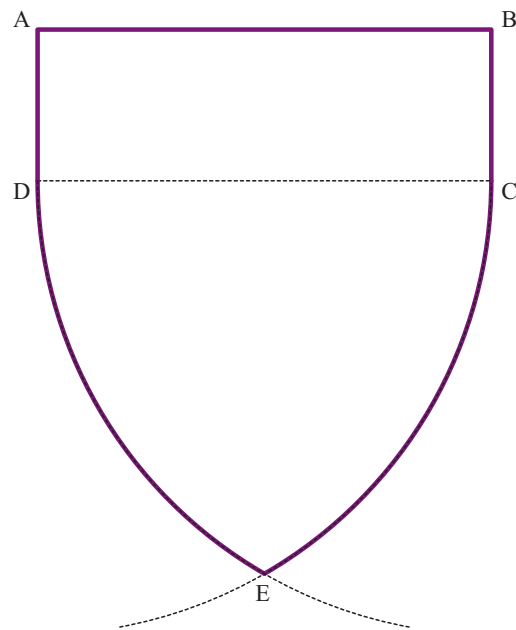
- 1 Draw a rectangle ABCD which is 6 cm long and 2 cm wide.



- 2 Set a compass radius to the length of [CD]. Put the compass point at D. Draw an arc from C.



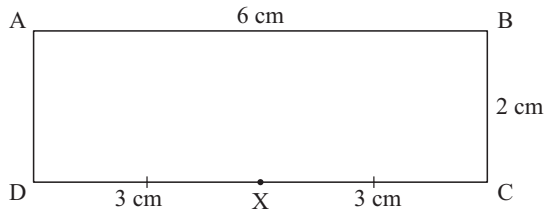
- 3 Put the compass point at C. Draw an arc from D so that the two arcs meet at E. The shape is now complete.



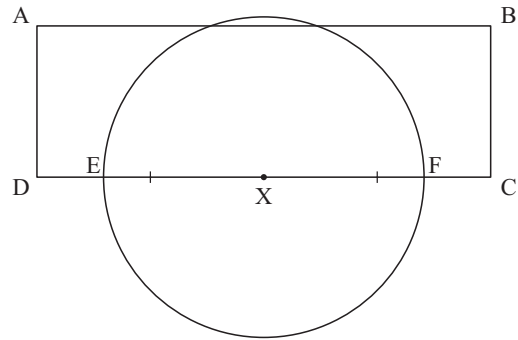
- 4 Find the distance from D to E.

Method 2

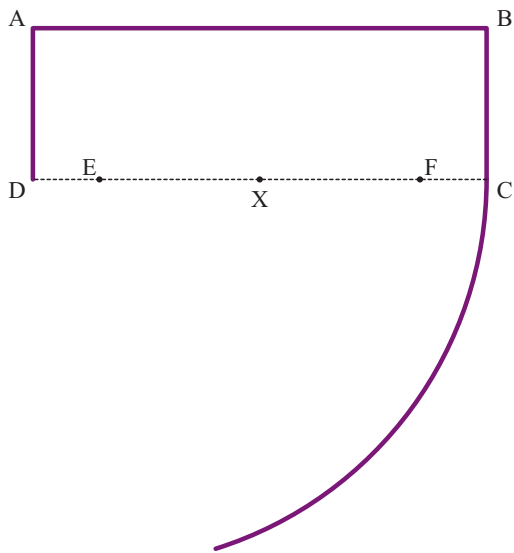
- 1 Draw the same rectangle ABCD as in **Method 1**. Mark a point X at the midpoint of [DC].



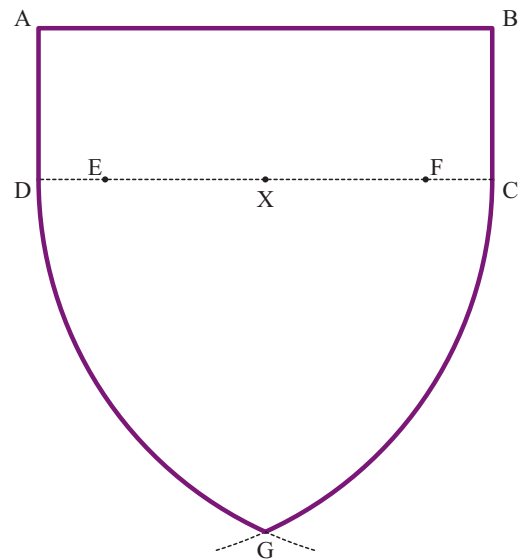
- 2 Set the compass radius slightly shorter than [DX]. Draw a circle centred at X which cuts [DC] at E and F.



- 3 Set the compass radius to [EC]. Put the compass point at E, then draw an arc from C.



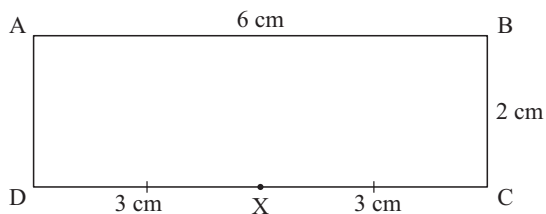
- 4 Put the compass point at F. Draw an arc from D so that the arcs meet at G. The shape is now complete.



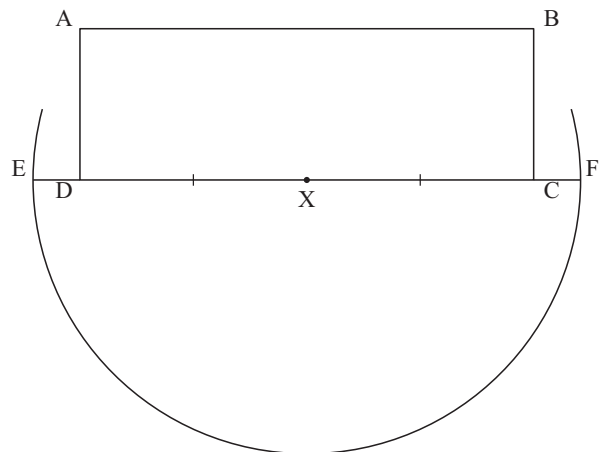
- 5 Explain why [EC] and [DF] are the same length.

Method 3

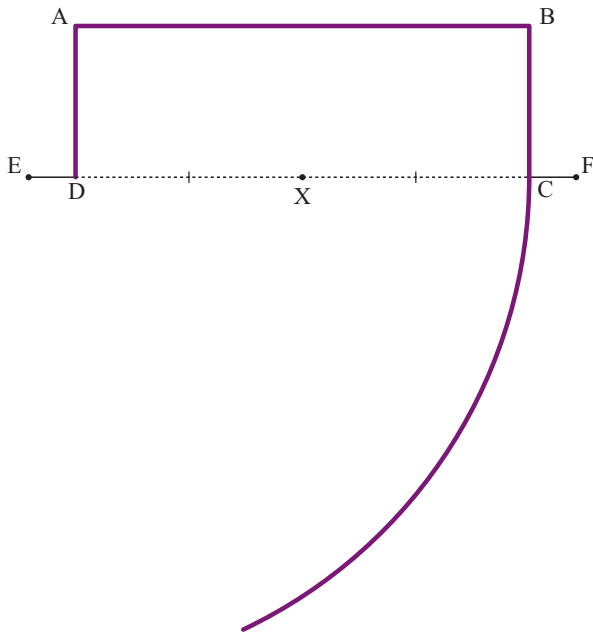
- 1 Draw a rectangle as in **Method 2**, with the midpoint of [DC] marked X. Extend the line [DC] either side of the rectangle.



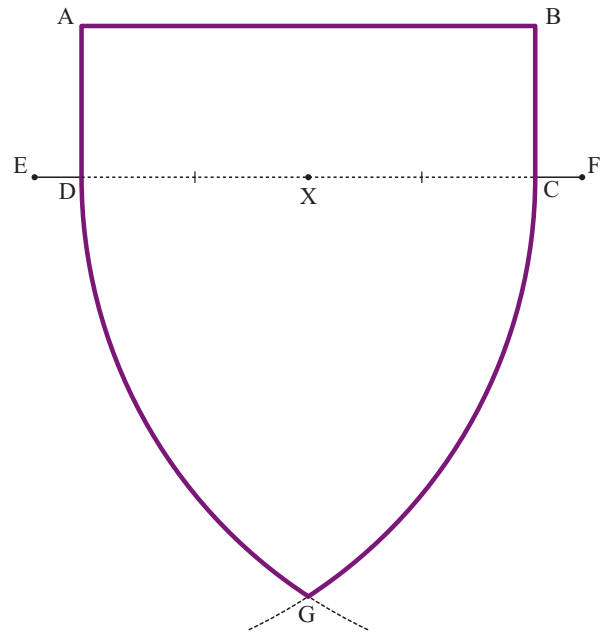
- 2 Set the compass radius slightly longer than [DX]. Draw a circle centred at X, cutting [DC] at E and F.



- 3** Set the compass radius to [EC]. Put the compass point at E, then draw an arc from C.



- 4** Put the compass point at F. Draw an arc from D so that the arcs meet at G. The shape is now complete.



What to do:

- 1** Which of these shields will be the tallest? Why?
- 2** Draw a shield using each of the methods.
- 3** Which shield shape do you like the most?
- 4** Using your favourite shield shape, draw a larger shield, about the size of an A4 sheet of paper.
- 5** Think of three or four things that you enjoy, or are good at. Design a symbol to represent each of these things.
- 6** Decorate your shield using these symbols.
- 7** Have your teacher display all the shields made by the students in your class. Try to guess which shield belongs to each student.

RESEARCH

- Research how different civilisations decorated their shields, and the meanings of the decorations.
- What is the “testudo formation”? Where did this name come from?