

Design & Technology

Mathematics for D&T – Coordinates and Geometry

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don't spend too much time on one question

Good luck!

Q1. The table below shows a set of coordinates.

Path
(0,10)
(10,10)
(15,5)
(15,0)
(0,0)

Plot the path and calculate the area of the shape **(3 marks)**

Q2. The table shows the geometry of a shape. Using the coordinates draw the shape and calculate the area bound by the external and internal paths **(4 marks)**

Internal Path	External path
Circle with a radius of 2.5 with centre (0,1)	(5, 4)
	(5, -3)
	(-6, -3)
	(-6, 4)

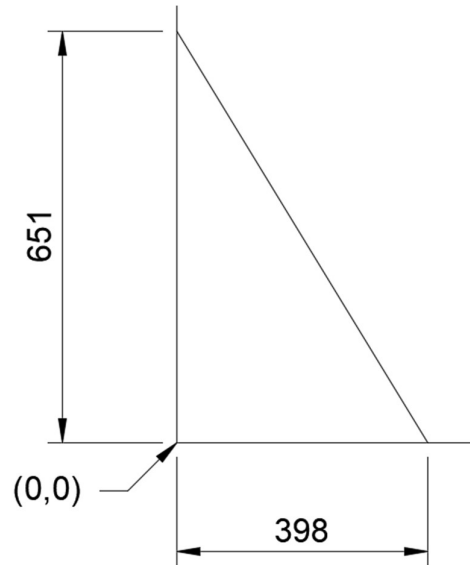
Q3. The table below shows a series of coordinates for a product that is being laser cut.

Internal path	External path
(0,10)	(-2, 12)
(10,10)	(12, 12)
(5, 0)	(12, -2)
	(-2, -2)

Plot the external and internal paths **(4 marks)**

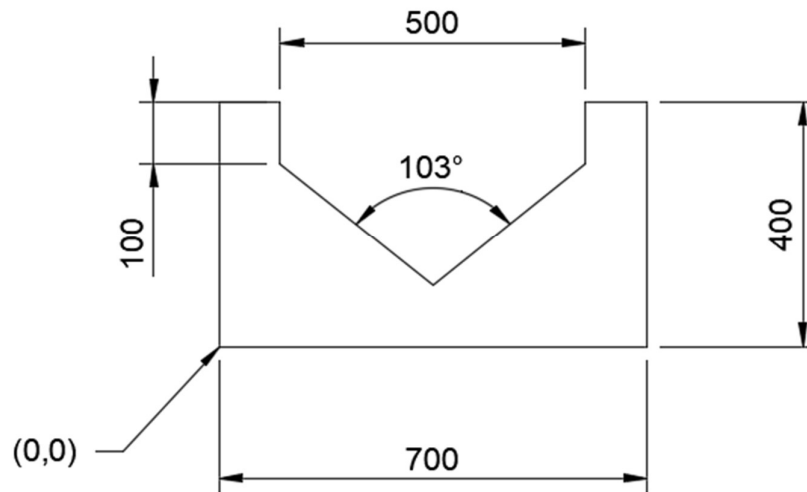
Q4. Complete the table below to show the coordinates of the shape and calculate the area of the shape **(3 marks)**

Coordinates
(0, 0)



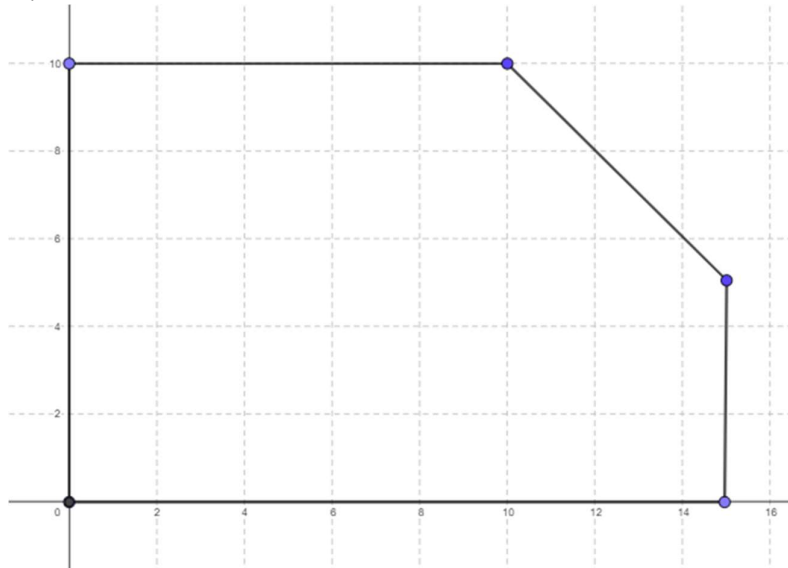
Q5. Complete the table labelling all the coordinates of the shape below (6 marks)

Coordinates
(0, 0)



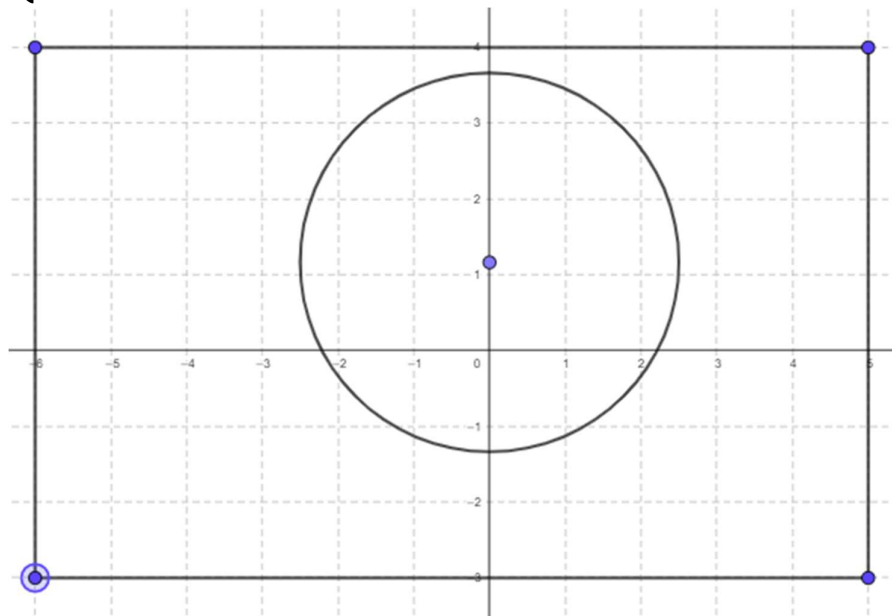
Answers

Q1.



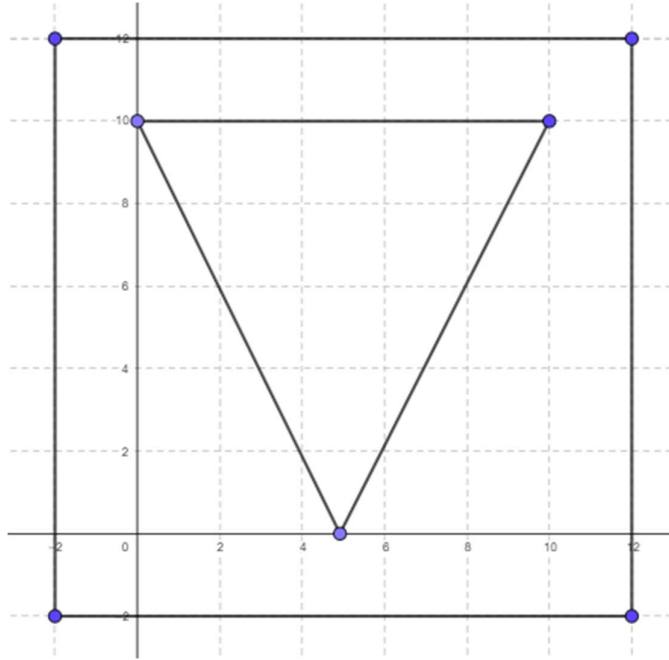
Area = 137.5

Q2.



Area = 57.4

Q3.



Q4.

Coordinates
(0, 0)
(0, 651)
(398, 0)

Area = 129,549

Q5.

Coordinates
(0, 0)
(0, 400)
(100, 400)
(100, 300)
(350, 100)
(600, 300)
(600, 400)
(700, 400)
(700, 0)

