

E3.2 Construction

Question Paper

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Level	Core
Topic	E3. Geometry
Sub-Topic	E3.2 Construction
Booklet	Question Paper

Time Allowed: 40 minutes

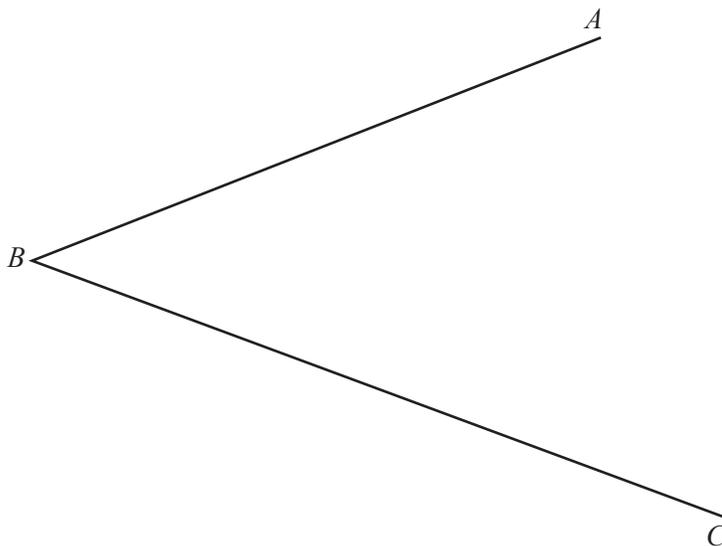
Score: /33

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

- 1 (a) Using a straight edge and compasses only, construct the bisector of angle ABC .



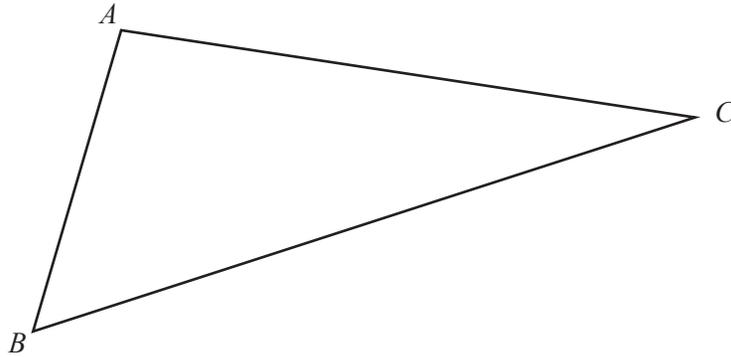
[2]

- (b) Using a straight edge and compasses only, construct the perpendicular bisector of the line DE .



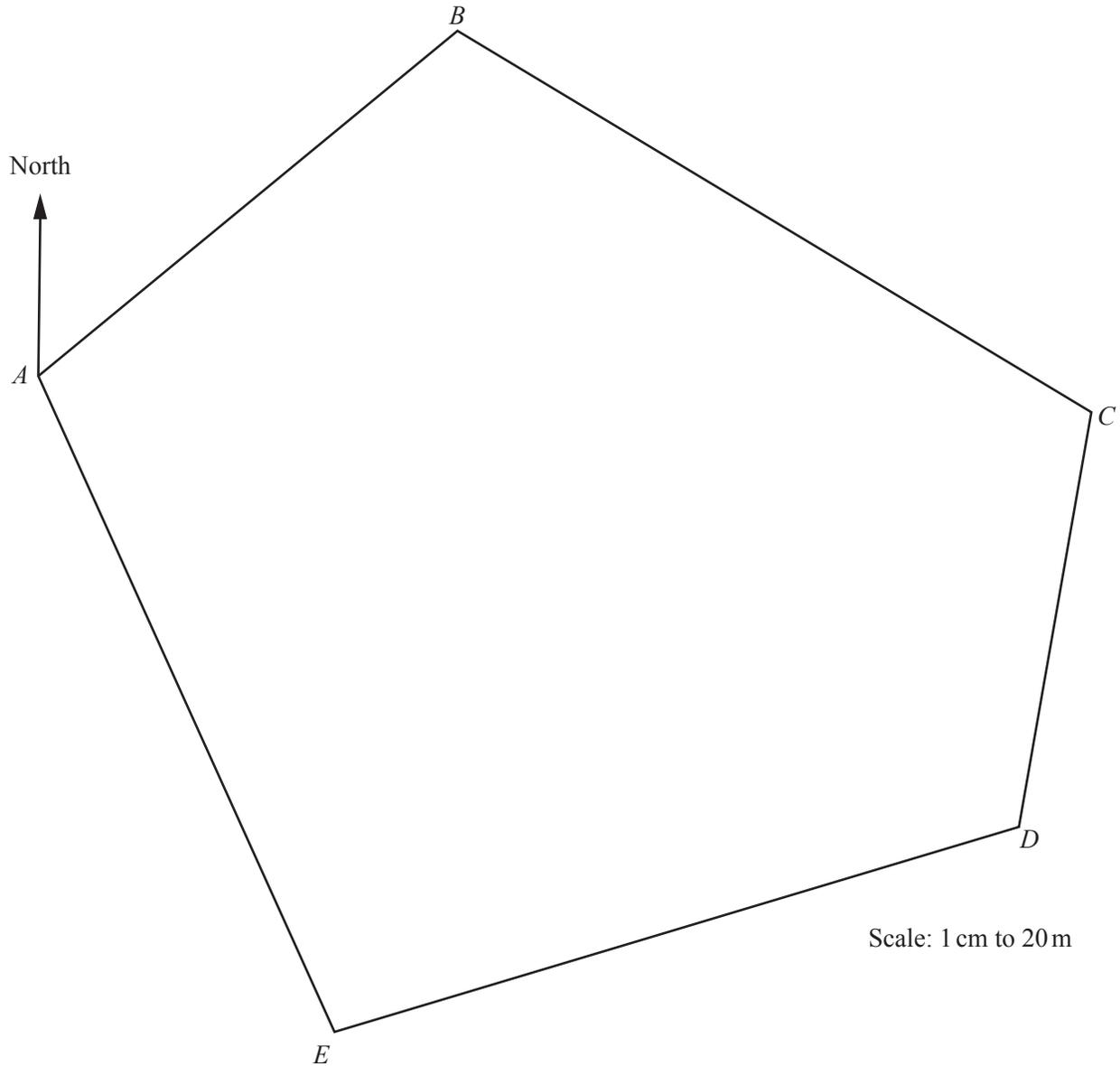
[2]

- 2 The diagram shows triangle ABC .



- (a) Using a straight edge and compasses **only**, construct the bisector of angle ABC . [2]
- (b) Draw the locus of points **inside** the triangle that are 3 cm from AC . [1]

- 3 The scale drawing shows a park, $ABCDE$.
The scale is 1 centimetre represents 20 metres.



- (a) Measure the bearing of B from A .

..... [1]

All constructions in the following parts must be completed using a straight edge and compasses only.
All construction arcs must be clearly shown.

(b) A straight cycle path crosses the park from E to BC .
The path bisects angle AED .

(i) Construct the cycle path. [2]

(ii) Work out the actual length, in metres, of the cycle path.

..... m [2]

(iii) Alice cycles from E to BC along the path at a constant speed of 9 km/h.

(a) Show that 9 km/h is equivalent to 2.5 m/s.

[1]

(b) Find the time she takes to cycle from E to BC .
Give your answer in seconds.

.....s [2]

(c) A straight footpath, equidistant from D and E , crosses the park from DE to AB .

Construct the footpath. [2]

(d) (i) Construct the locus of points 150 metres from A and inside the park. [2]

(ii) A region for sports activities is less than 150 metres from A and closer to E than to D .

Shade this region. [1]

- 4 Complete part (a) and part (b) using a straight edge and compasses only. Show all your construction arcs.

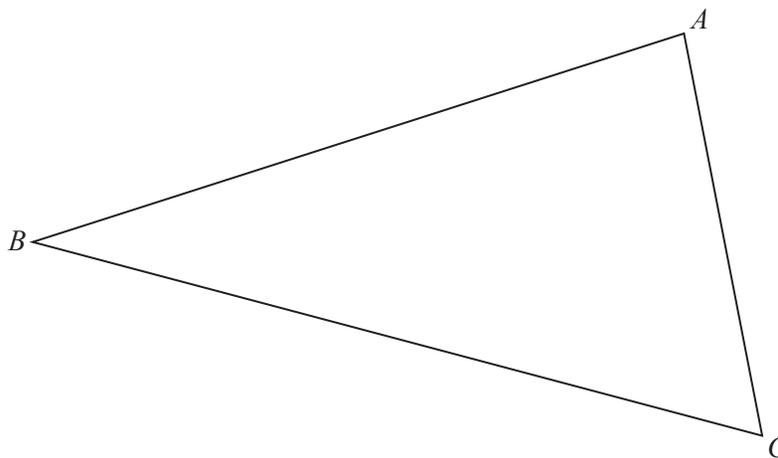
- (a) Construct the locus of points that are equidistant from the points X and Y .

X •

Y •

[2]

- (b) (i) Construct the locus of points that are equidistant from line AB and line AC .



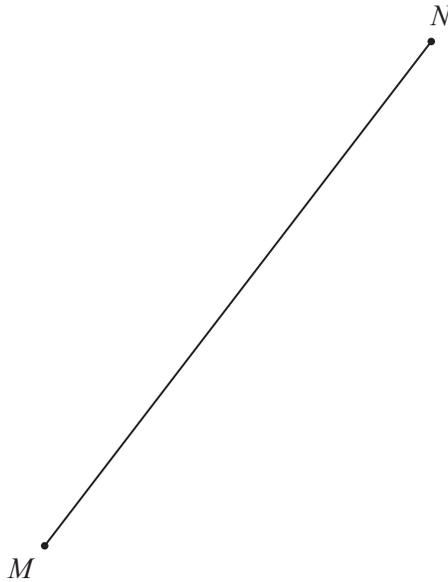
[2]

- (ii) Shade the region, inside the triangle, which is closer to AB than to AC .

[1]

- (c) **Complete this part using a ruler and compasses only.**
Show all your construction arcs.

Construct the locus of points that are 4 cm from the line MN .



[3]

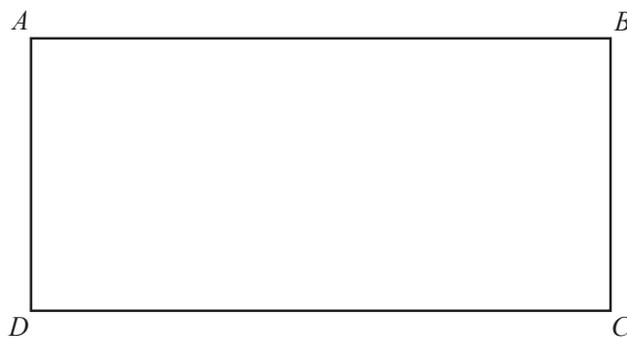
5 Using a ruler and compasses only, construct a triangle with sides 5 cm, 6 cm and 7 cm.

The 5 cm side has been drawn for you.



[2]

6 In this question use a ruler and compasses.



Shade the region inside rectangle $ABCD$ that is

- more than 2 cm from AD
- and
- more than 4 cm from B .

[3]