1 The diagram shows a circle with centre O and chord JK.

Diagram not drawn to scale.

The circle has a radius of $4 \cdot 6$ cm and $J\widehat{O}K = 100°$.
Calculate the area of the shaded region.

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[6]

Turn over.

2

Diagram not drawn to scale.
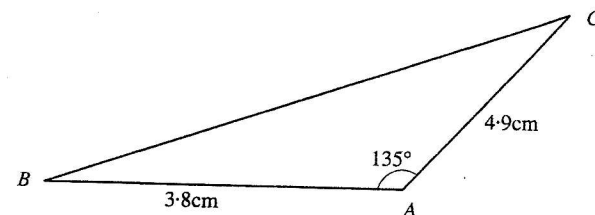
In triangle ABC, $B\widehat{A}C = 135°$ measured correct to the nearest degree.
$AC = 4 \cdot 9$ cm and $AB = 3 \cdot 8$ cm both measured correct to the nearest mm.

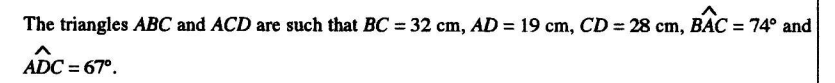Find correct to three significant figures, the greatest possible area of the triangle ABC.

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[3]

3 The diagram shows two triangles *ABC* and *ACD* with the common side *AC*.

B

A

74°

19 cm

32 cm

D

67°

28 cm

C

Diagram not drawn to scale.

The triangles *ABC* and *ACD* are such that $BC = 32$ cm, $AD = 19$ cm, $CD = 28$ cm, $B\hat{A}C = 74°$ and $A\hat{D}C = 67°$.

Find the size of $A\hat{B}C$.

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[6]

(4) The diagram shows triangle *PQR*.

Diagram not drawn to scale.

The triangle *PQR* is such that *QR* = 7·6 cm, *PR* = 12·3 cm and *PQ* = 8·2 cm.

(a) Find the size of $P\hat{Q}R$.

[3]

(b) Find the area of triangle *PQR*.

[2]

(5) The diagram shows triangle *GHK*.

Diagram not drawn to scale.

Given that *GH* = 6·7 cm, *GK* = 5·6 cm and $G\hat{K}H$ = 48°, calculate the area of the triangle *GHK*.

[6]