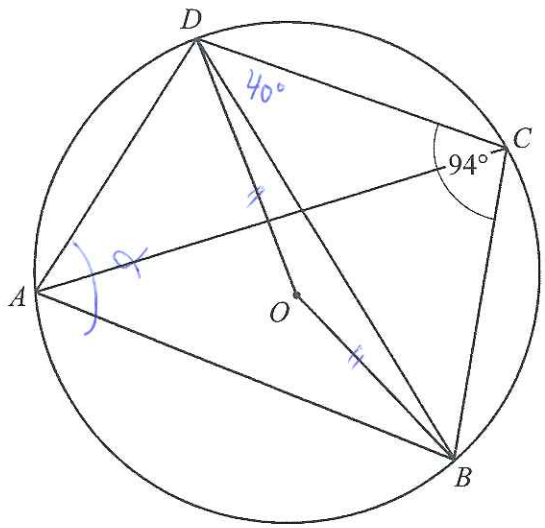
6



NOT TO SCALE

ABCD is a cyclic quadrilateral in the circle, centre *O*.
Angle *DCB* = 94°.

(a) Calculate

Cyclic quad ∴ $\alpha + 94 = 180$
∴ $\alpha = 86°$

(i) angle *DAB*,

Answer(a)(i) 86° [1]

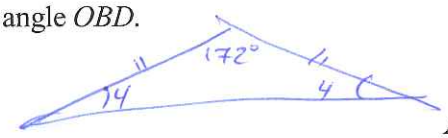
(ii) the reflex angle *DOB*,

$= 2 \cdot 86$ (angle @ center)

Answer(a)(ii) 172° [1]

(iii) angle *OBD*.

Iscoceles (base angles equal!)



Answer(a)(iii) 4° [2]

(b) Angle *BDC* = 40°.

Calculate angle *DAC*.

∴ CAB = 40

and you know $\alpha = 86°$

∴ 86 − 40

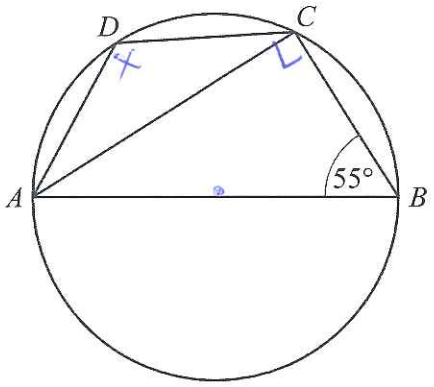
= 46°

Answer(b) 46° [2]

For Examiner's Use

For Examiner's Use

2 **(a)**



NOT TO SCALE

C and D are points on the circumference of a circle.
AB is a diameter of the circle and angle $ABC = 55°$.

Find

(i) angle ADC,

$\therefore$ $x + 55 = 180$
$x = 125°$

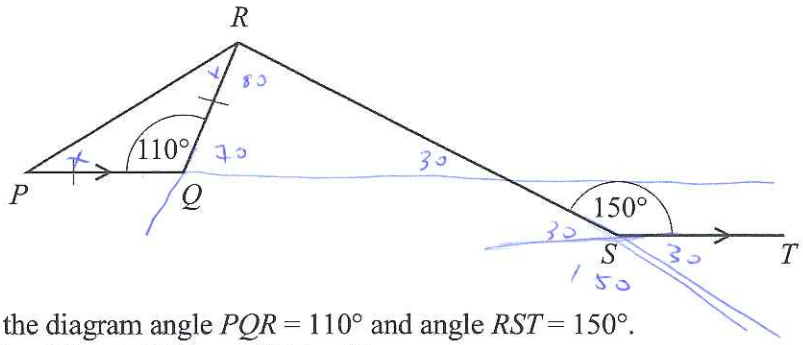
Answer(a)(i) 125° [1]

(ii) angle CAB.

$180 - 90 - 55 = 90 - 55$

Answer(a)(ii) 35° [1]

(b)



NOT TO SCALE

In the diagram angle $PQR = 110°$ and angle $RST = 150°$.
$PQ = QR$ and PQ is parallel to ST.

Find

(i) angle PRQ,

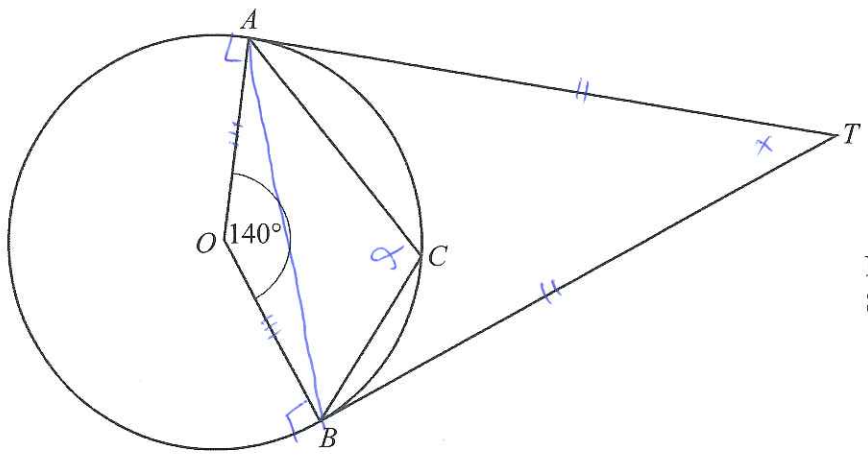
$2x + 110 = 180$
$2x = 70$
$x = 35°$

Answer(b)(i) 35° [1]

(ii) angle QRS.

Answer(b)(ii) 80° [2]

(c)



NOT TO SCALE

TA and *TB* are tangents to a circle centre *O*.
C is a point on the circumference and angle *AOB* = 140°.

(i) Find angle *ATB*.

$90 + 90 + 140 + x = 360°$

Answer(c)(i) ..... 110° ..... [2]

(ii) Find angle *ACB*.

cyclid quad $\therefore 140 + \alpha = 180$

Answer(c)(ii) ..... $\alpha = 40°$ ..... [2]

(iii) On the diagram, draw the chord *AB*.

The radius of the circle is 5 cm.
Calculate the length of the chord *AB*.

Cosine Rule

(ch. 24 stuff :)

Answer(c)(iii) ..... cm [3]

For Examiner's Use