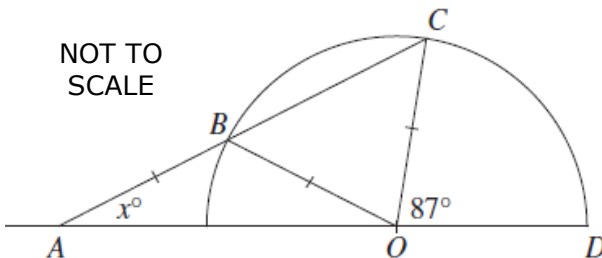




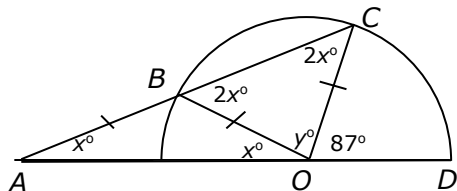
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- 2016 12 b** The diagram shows a semicircle with centre O . It is given that $AB = OB$, $\angle COD = 87^\circ$ and $\angle BAO = x^\circ$.

- (i) Show that $\angle CBO = 2x^\circ$, giving reasons.
 (ii) Find the value of x , giving reasons.



- (i) $\angle AOB = x^\circ$ (base \angle s of isos Δ)
 $\therefore \angle CBO = 2x^\circ$ (ext \angle of Δ result)



State Mean:
0.80

- (ii) $\angle BCO = 2x^\circ$ (base \angle s of isos Δ)
 Let $\angle BOC = y^\circ$.

$$2x + 2x + y = 180 \text{ (} \angle \text{ sum of } \Delta \text{)}$$

$$x + 87 + y = 180 \text{ (straight } \angle \text{)}$$

$$\therefore 2x + 2x = x + 87$$

$$3x = 87$$

$$x = 29$$

[OR: $\angle BCO = 2x^\circ$ (base \angle s of isos Δ)

$$2x + x = 87 \text{ (ext } \angle \text{ of } \Delta \text{ result)}$$

and so on, see above]

State Mean:
1.30

* These solutions have been provided by [projectmaths](#) and are not supplied or endorsed by BOSTES.

BOSTES: Notes from the Marking Centre

This information is released by BOSTES in late Term 1 2017.