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

NOT TO SCALE

(i) Show that $\angle CBO = 2x°$, giving reasons. **1**

(ii) Find the value of x, giving reasons. **2**
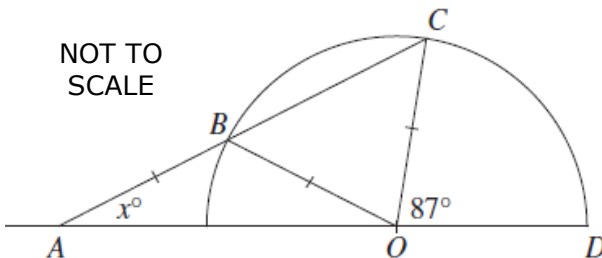
(i) $\angle AOB = x°$ (base $\angle$s of isos $\triangle$)

$\therefore \angle CBO = 2x°$ (ext $\angle$ of $\triangle$ result)
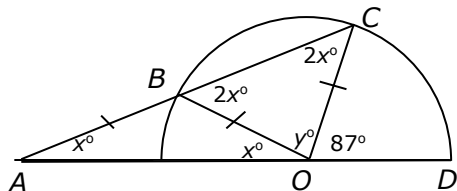
State Mean: **0.80**

(ii) $\angle BCO = 2x°$ (base $\angle$s of isos $\triangle$)

Let $\angle BOC = y°$.

$2x + 2x + y = 180$ ($\angle$ sum of $\triangle$)

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

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

$3x = 87$

$x = 29$

[OR: $\angle BCO = 2x°$ (base $\angle$s of isos $\triangle$)

$2x + x = 87$ (ext $\angle$ of $\triangle$ result)

and so on, see above]

State Mean: **1.30**

BOSTES: Notes from the Marking Centre

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