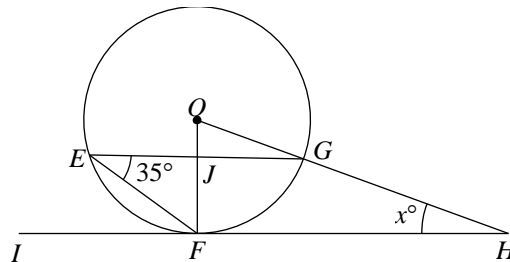# CHAPTER 8: CIRCLES III

## Cloned SPM Question (2006, Paper 1)

In the diagram, *IFH* is a tangent to the circle with centre *O* at *F*. *EJG*, *OJF* and *OGH* are straight lines.



Find the value of *x*.

**A**      20
**B**      25
**C**      35
**D**      40

*Solution*

$\angle FOG = 2 \times \angle FEG$
$\phantom{\angle FOG} = 2 \times 35°$
$\phantom{\angle FOG} = 70°$

$\angle OFH = 90°$
Thus, $x + \angle FOG = 90$
$\phantom{Thus, } x = 90 - 70$
$\phantom{Thus, x} = 20$

*Answer*: **A**

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*Pointers*
- The angle at the centre, $\angle FOG$, is twice the angle at the circumference, $\angle FEG$.
- Radius *OF* is perpendicular to the tangent *IFH* at the point of contact *F*.

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