

Name: _____ () Class: _____ Date: _____

Lesson Worksheet 10.2B(II+)

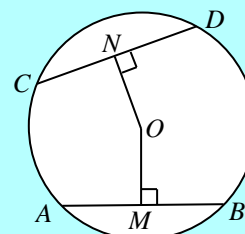
Objective: To solve questions using the properties 'equal chords, equidistant from centre' and 'chords equidistant from centre are equal'.

In this worksheet, unless otherwise stated, the centre of a circle is denoted by O .

Equal chords of a circle are equidistant from the centre.

i.e. If $AB = CD$, then $OM = ON$.

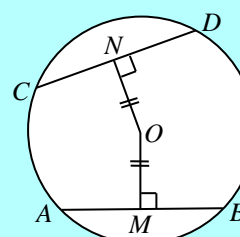
[Reference: *equal chords, equidistant from centre*]



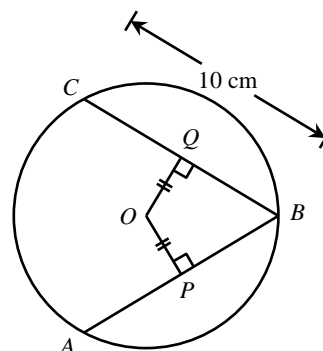
Chords which are equidistant from the centre of a circle are equal in length.

i.e. If $OM = ON$, then $AB = CD$.

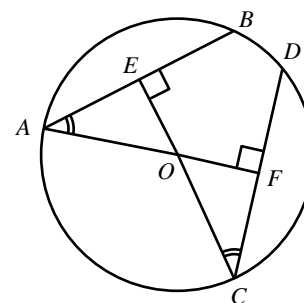
[Reference: *chords equidistant from centre are equal*]



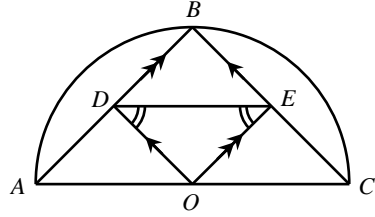
- In the figure, P and Q are points on AB and BC respectively such that $AB \perp OP$ and $BC \perp OQ$. $OP = OQ = 3$ cm and $BC = 10$ cm. Find $\angle POQ$, correct to 3 significant figures.



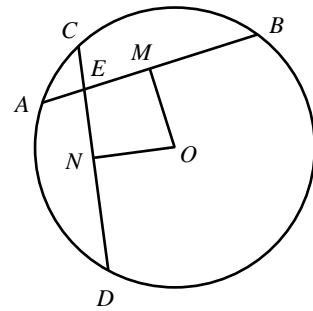
- In the figure, E and F are points on AB and CD respectively such that $OE \perp AB$ and $OF \perp CD$. $\angle OAE = \angle OCF$. If $CD = 14$ cm, find BE .



3. In the figure, ABC is a semi-circle. D and E are points on AB and BC respectively such that $\angle ODE = \angle OED$. $OD \parallel CB$ and $AB \parallel OE$. If the radius of the semi-circle is $3\sqrt{2}$ cm, find the area of $\triangle BDE$.

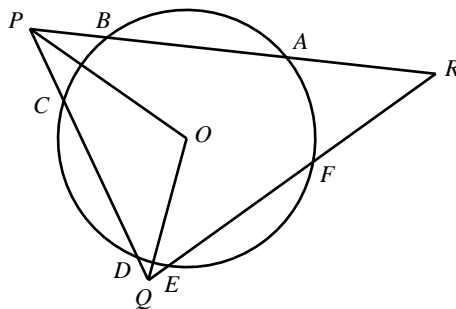


4. In the figure, M and N are the mid-points of AB and CD respectively. AB cuts CD at E . $AB = CD = 36$ cm and $DE = 32$ cm. If the radius of the circle is 19.5 cm, find OM and OE .
(Give the answers correct to 3 significant figures if necessary.)



HKDSE Corner

5. In the figure, O is the centre of the circle $ABCDEF$. $\triangle PQR$ intersects the circle at A, B, C, D, E and F . If $\angle PRQ = 42^\circ$ and $AB = CD = EF$, find $\angle POQ$.



Try More

6. In the figure, E and F are points on AC and BD respectively such that $OE \perp AC$ and $OF \perp BD$. AC and BD intersect at G . $AB = CD$ and $\angle BCG = \angle CBG$. If $\angle EOF = 60^\circ$, find $\angle EFG$.

