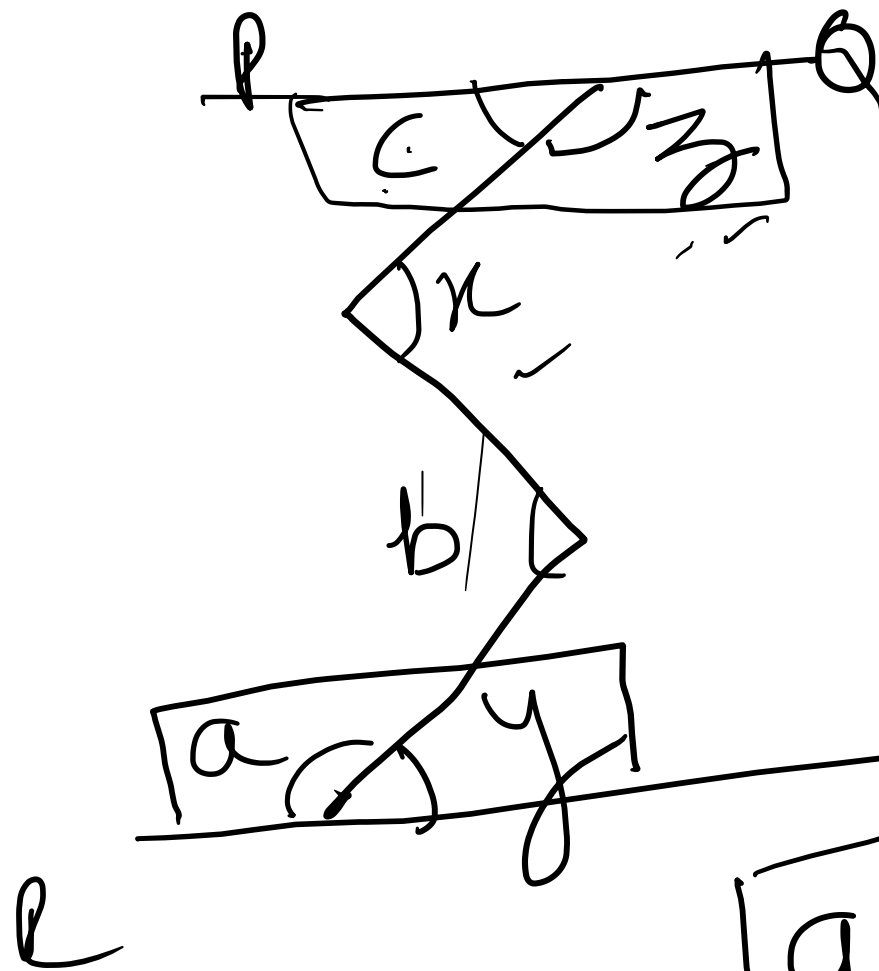




CAVALRY DEFENCE ACADEMY (CDA)
Dehradun

IMPORTANT FORMULAS OF GEOMETRY

ARROW FIGURE

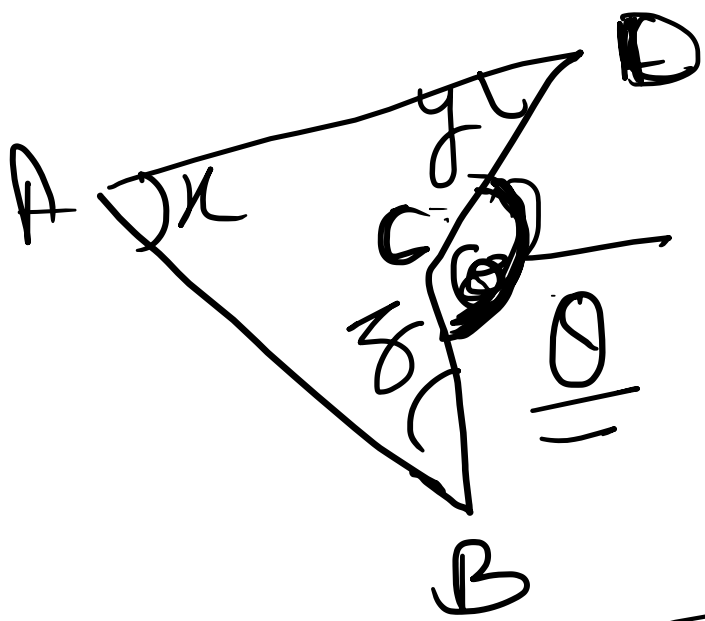


arrow wala

PQ and
RS are ≅

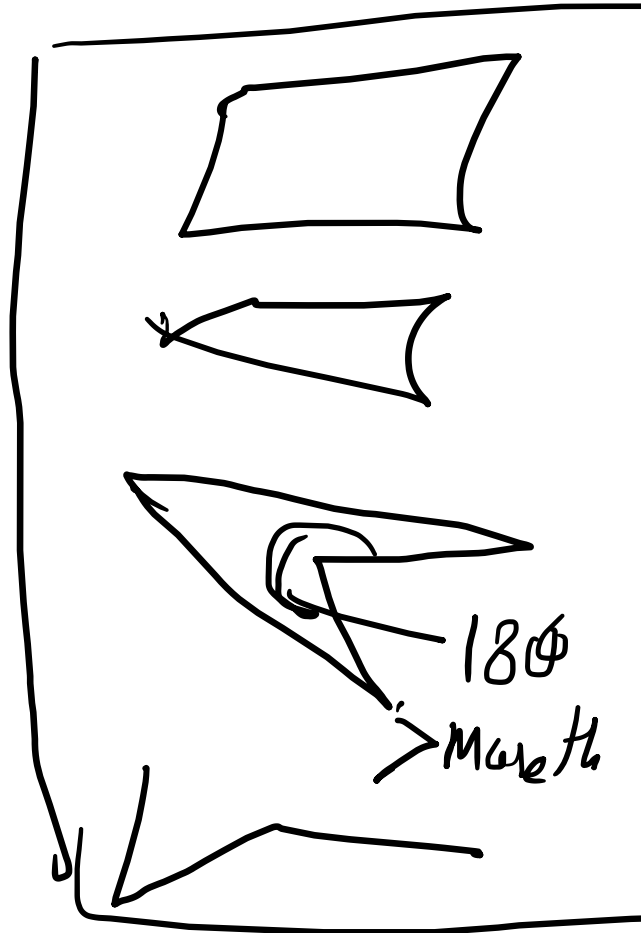
$$a + b + c = x + y + z$$

11 Geometry 11



Note:- When any angle of a quadrilateral is more than 180° it's called a Concave Quad.

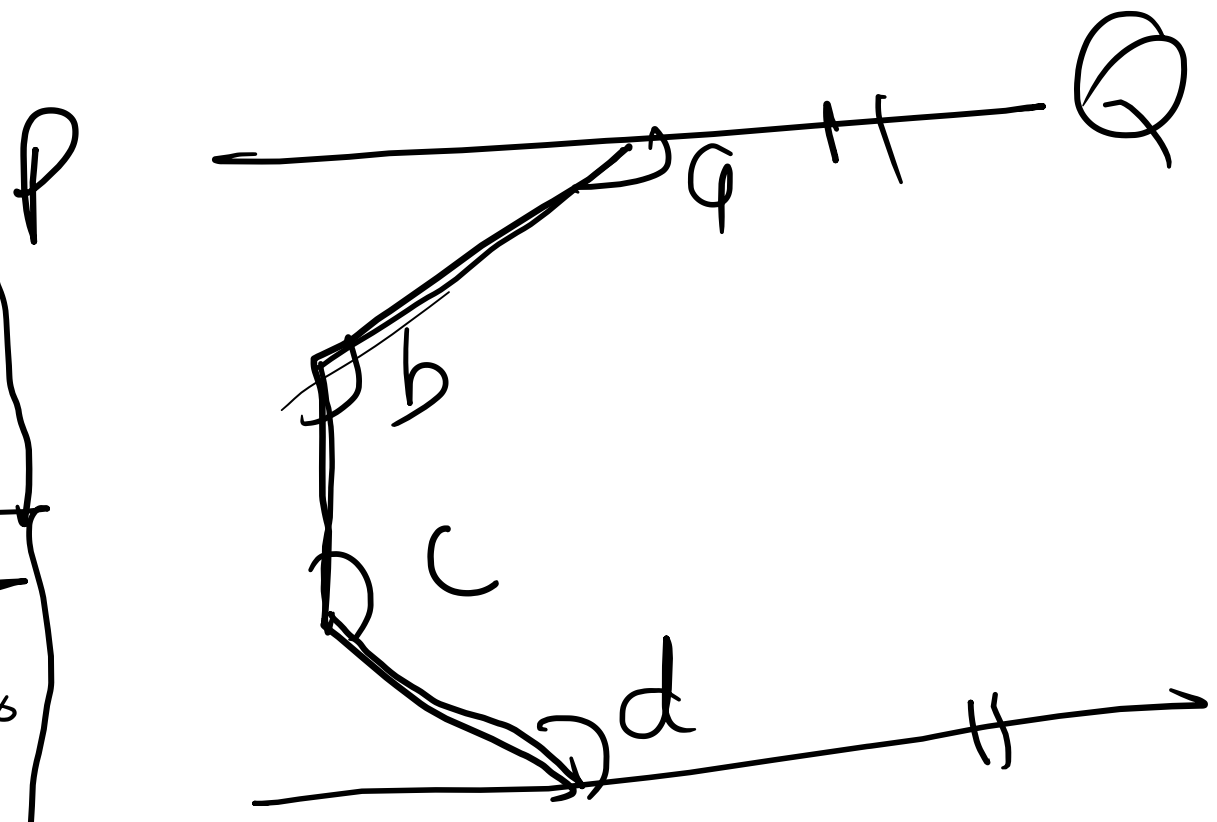
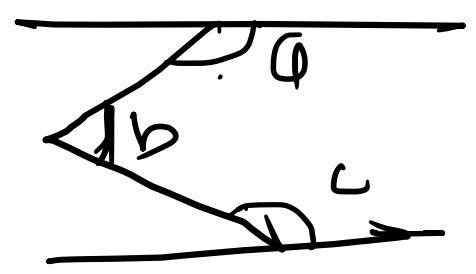
$$O = x + y + z$$



Q88W-2026



$\angle a$
 $a + b + c = 360^\circ$
 $a = 180^\circ$



$PQ \cong RS$

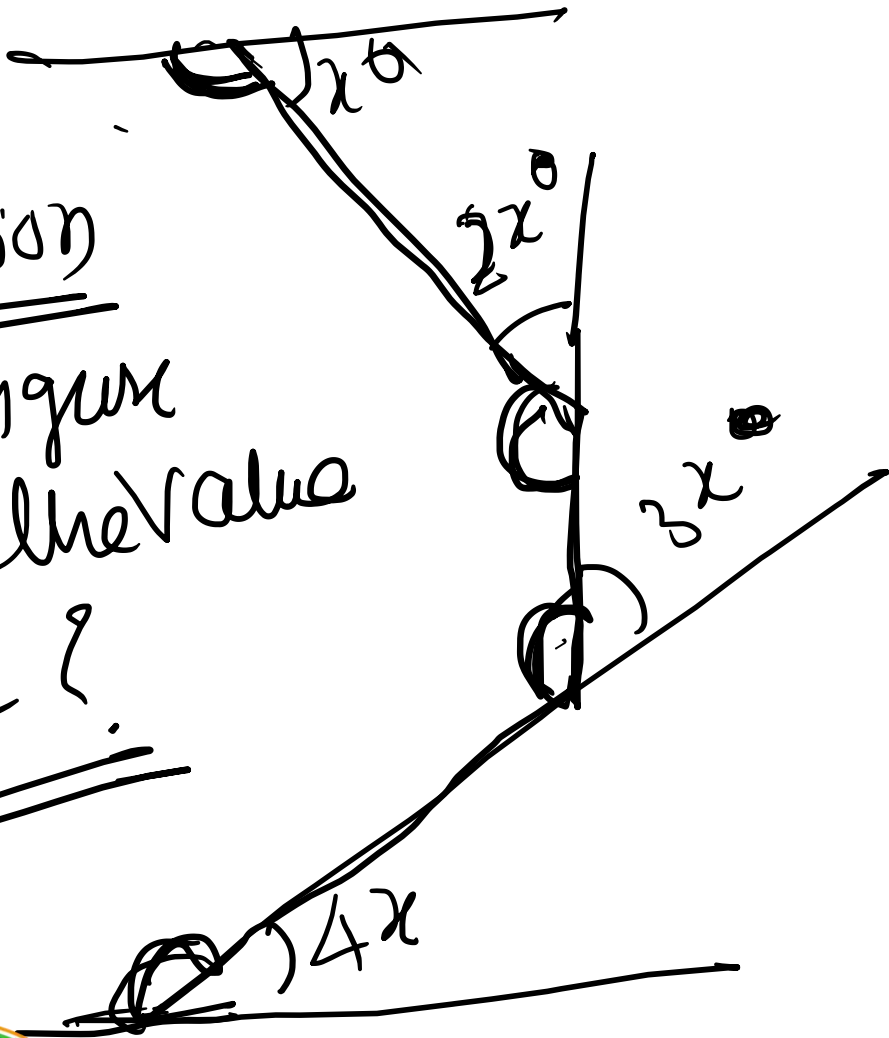
$\angle a + \angle b + \angle c + \angle d = 3 \times 180^\circ$

Three lines in between

$\angle a + \angle b + \angle c = 2 \times 180^\circ$
 $\therefore 2$ lines are there

Question

Given figure
find the value
of x ?



$$180 - x$$

$$180 - 2x$$

$$180 - 3x$$

$$180 - 4x$$

example

$$\angle A + \angle B + \angle C + \angle D = 3 \times 180^\circ$$

$$180 - x + 180 - 2x + 180 - 3x + 180 - 4x = 540$$

$$720 - 10x = 540$$

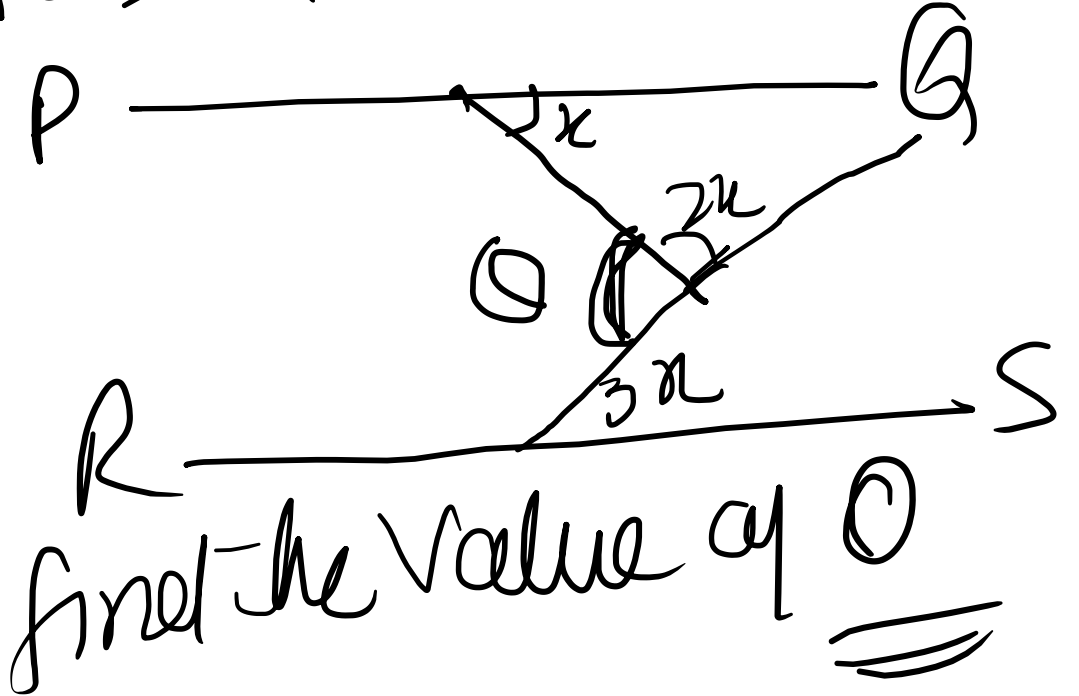
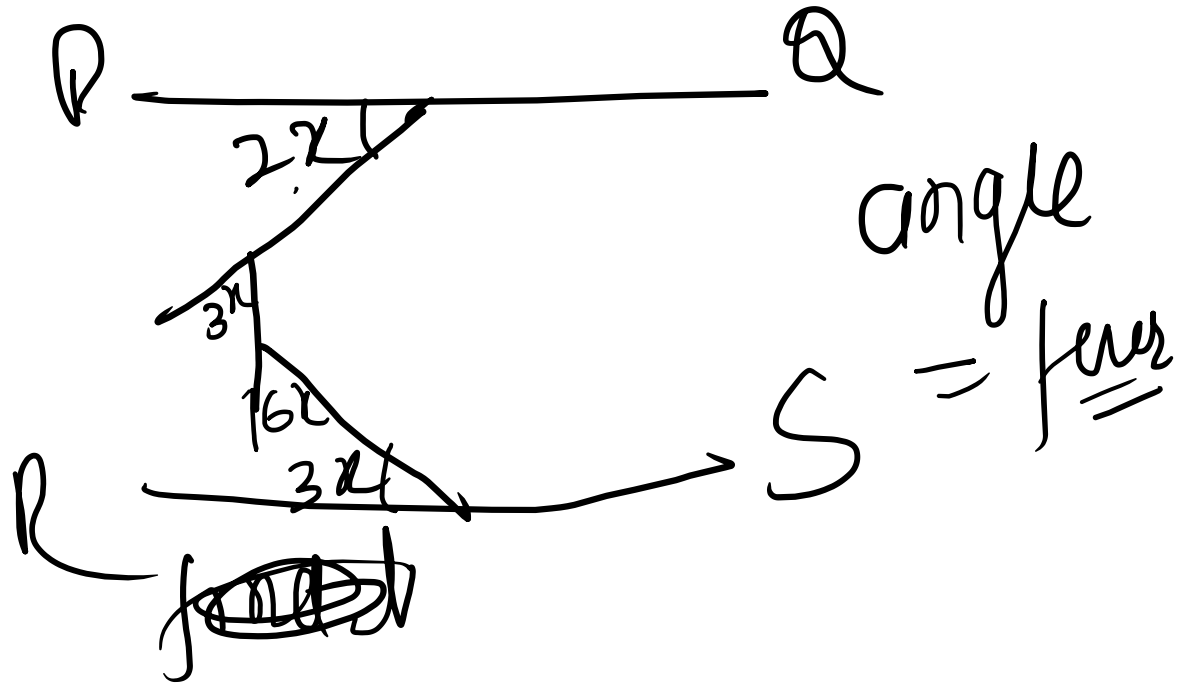
$$10x = 720 - 540$$

$$10x = 180$$

$$x = 18^\circ$$



Given figure find the value of x
 if $PQ \parallel RS$



$$x = 30^\circ$$

$$\theta = 120^\circ$$



Polygon $\rightarrow$ Regular Polygon

Sum of exterior angle = 360°

diagonal of a regular polygon

for

$$\text{interior angle} = \frac{(n-2) \times 180^\circ}{n}$$

$$n = \text{total sides of polygon}$$


$$\frac{(3-2) \times 180^\circ}{3} = \underline{\underline{60^\circ}}$$

Regular polygon exterior angle

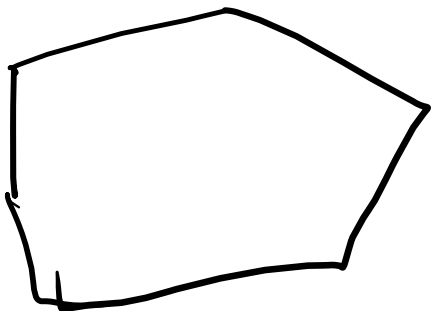
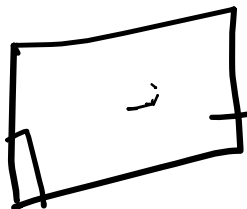
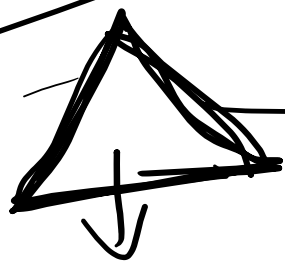
$$\frac{(n-2) \times 180^\circ}{n}$$

$$= \frac{3(3-2) \times 180^\circ}{3} = 60^\circ$$

$$\frac{(4-2) \times 180^\circ}{4} = 90^\circ$$

$$\text{diagonal found} = \frac{n(n-3)}{2}$$

$$\text{Sum of interior angles} = (n-2) \times 180^\circ$$

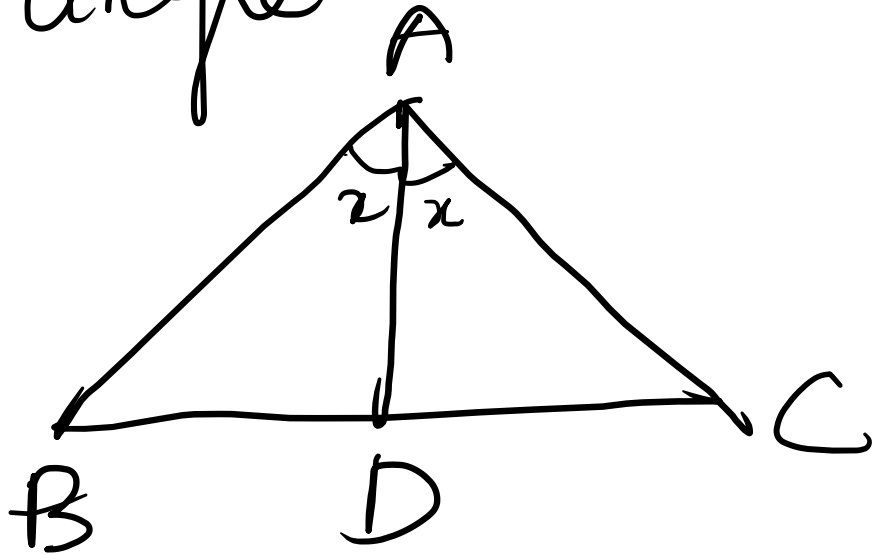


angle bisector

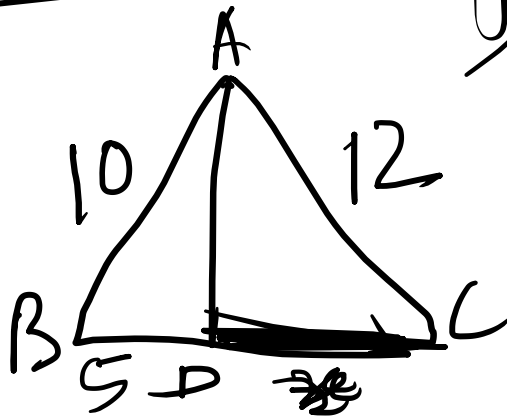
Thorem / Ratio of Base = Ratio of other two side

angle bisector

$$\frac{AB}{AC} = \frac{BD}{DC}$$



Question: — find the value of x in given figs
if $\angle A$ is a bisector $\Rightarrow AD$ is an angle bisector



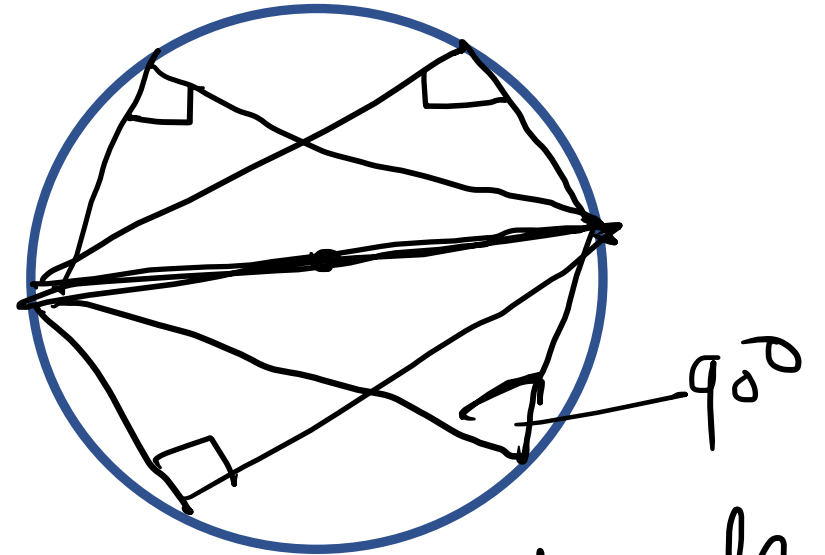
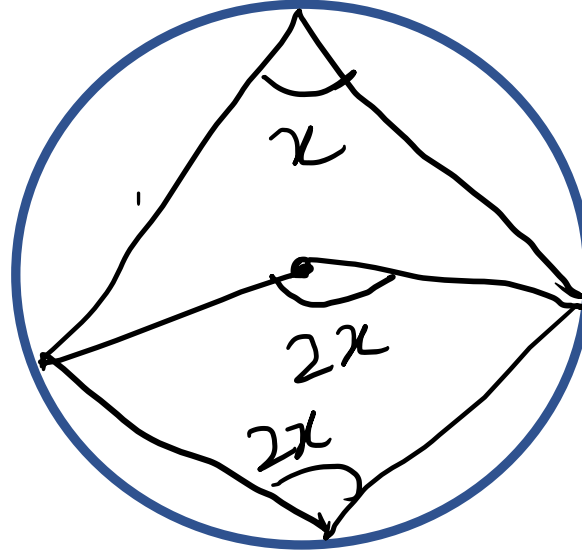
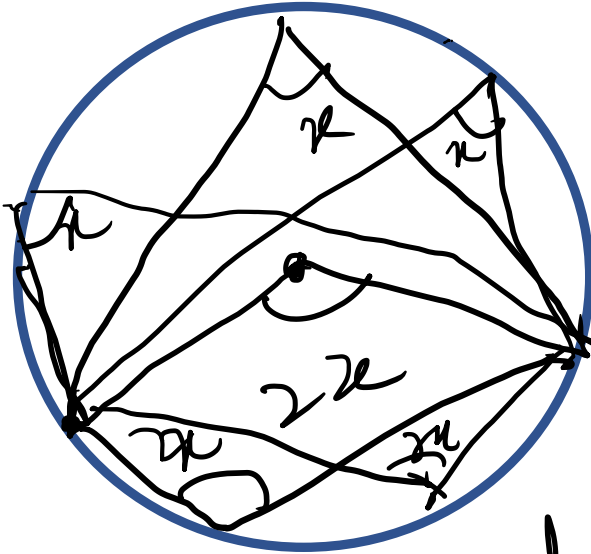
$$\frac{10}{12} = \frac{5}{x}$$

$$\underline{\underline{x = 6}}$$





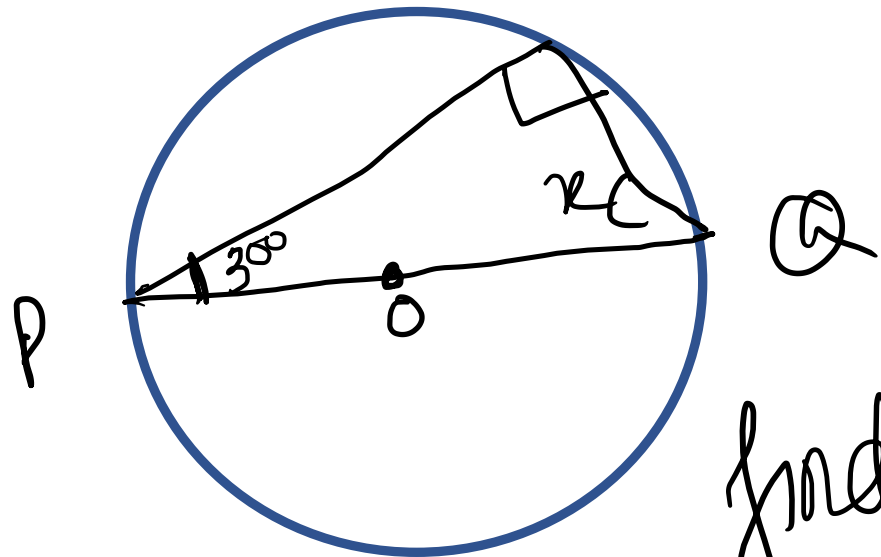
Circle



Central angle always
twice the angle
as per above figure

The biggest chord of circle
diameter

Question

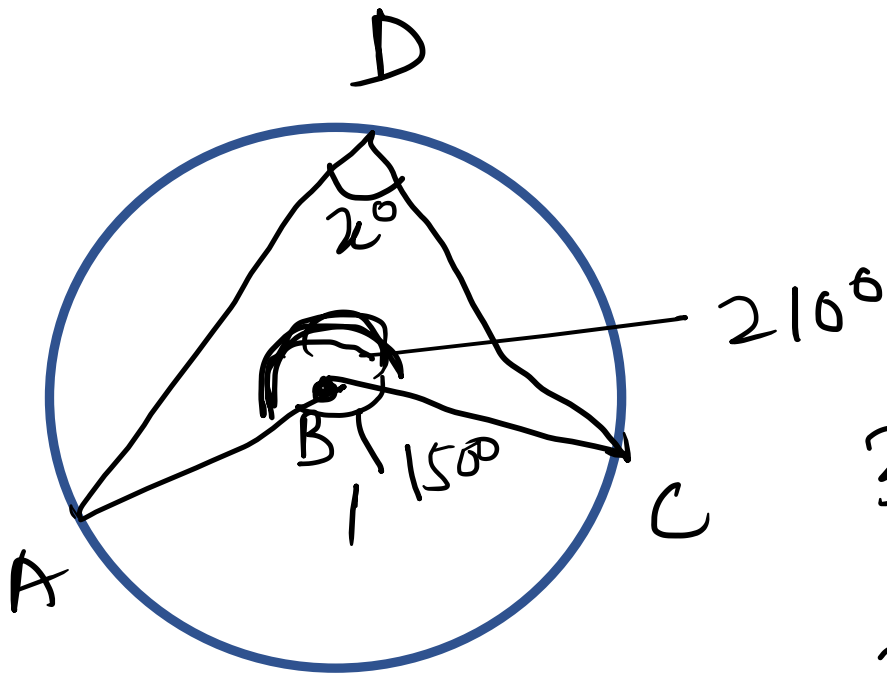


O is centre
PQ is diameter

Find the value of x ?

$$180^\circ = (x + 30^\circ + 90^\circ)$$
$$x = 180^\circ - 120^\circ = \underline{\underline{60^\circ}}$$





find the value of x ?

$$360^\circ - 210^\circ = 150^\circ$$

$$2x = 150^\circ$$

$$x = \underline{\underline{75^\circ}}$$

