HW
29/09/2021

Date
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LINES AND ANGLES (Exercise-14(A))

Q(23) In the given figure, find $\angle AOB$ and $\angle BOC$.

Ans→ $123^\circ, 80^\circ, x^\circ, 5x^\circ, 85^\circ$ is adding upto 360°.

$\therefore 123^\circ + 80^\circ + 85^\circ + x^\circ + 5x^\circ = 360^\circ$

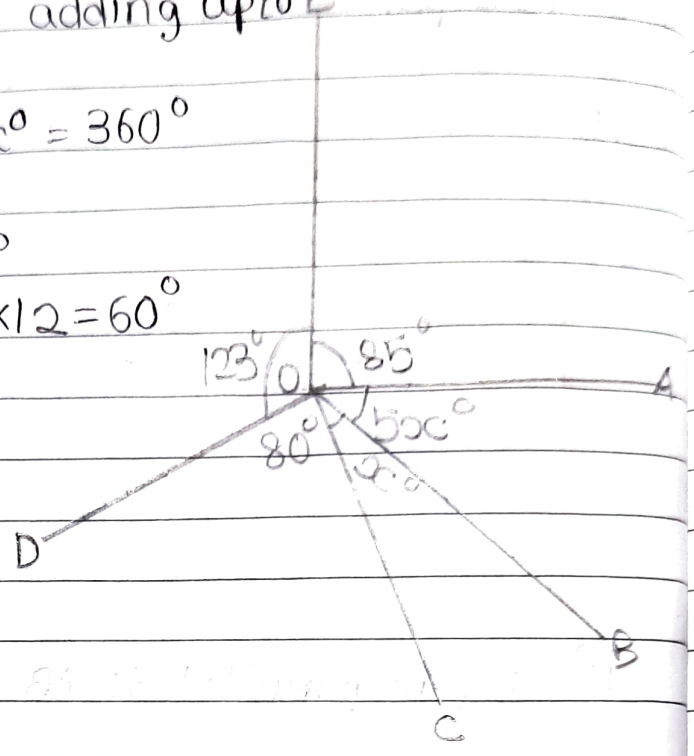
$\Rightarrow 6x^\circ + 288^\circ = 360^\circ$

$\Rightarrow 6x^\circ = 360^\circ - 288^\circ = 72^\circ$

$\Rightarrow x^\circ = \frac{72^\circ}{6} = 12^\circ \Rightarrow 5x = 5 \times 12 = 60^\circ$

$\therefore \angle COB = x^\circ = 12^\circ = \angle BOC$

$\angle AOB = 5x^\circ = 60^\circ$



Q(24) Find each angle shown in the figure.

Ans→ $2y^\circ, 2y^\circ, 3\frac{1}{2}y^\circ, 2\frac{1}{2}y^\circ$ is adding upto 360°.

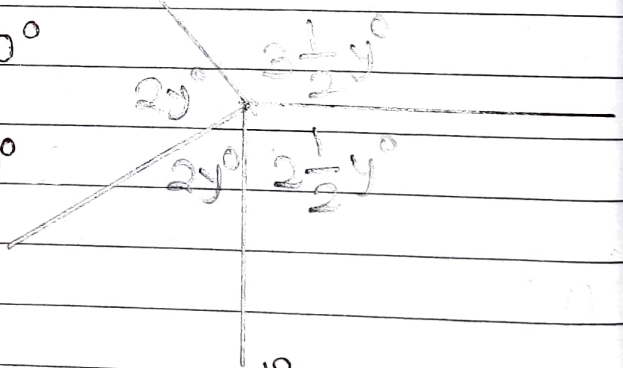
$\therefore \frac{2y^\circ}{1} + \frac{2y^\circ}{1} + \frac{7y^\circ}{2} + \frac{5y^\circ}{2} = 360^\circ$

$\Rightarrow \frac{4y^\circ + 4y^\circ + 7y^\circ + 5y^\circ}{2} = 360^\circ$

$\Rightarrow \frac{20y^\circ}{2} = 360^\circ \Rightarrow 10y^\circ = 360^\circ$

$\Rightarrow y^\circ = \frac{360^\circ}{10} = 36^\circ$

$\therefore y^\circ = 36^\circ; 2y^\circ = 2 \times 36^\circ = 72^\circ, \frac{7y^\circ}{2} = \frac{7 \times 36}{2} = 126^\circ, \frac{5y^\circ}{2} = \frac{5 \times 36}{2} = 90^\circ$



Q(25) AB, CD and EF are three lines intersecting at the same point.

(i) Find x, if $y = 45^\circ$ and $z = 90^\circ$

Ans→ $\angle COE = x^\circ, \angle EOB = z^\circ = 90^\circ, \angle BOD = 45^\circ$

$\therefore \angle COE + \angle EOB + \angle BOD = 180^\circ$

$\Rightarrow x^\circ + 90^\circ + 45^\circ = 180^\circ \Rightarrow x^\circ + 135^\circ = 180^\circ$

$\Rightarrow x^\circ = 180^\circ - 135^\circ = 45^\circ$

(ii) Find a, if $x = 3a$, $y = 5x$ and $z = 6x$

Ans→ $3a = x$, $y = 5x = 5 \times 3a = 15a$

$z = 6x = 6 \times 3a = 18a$

$\Rightarrow 18a = z \Rightarrow a = \frac{z}{18} = \frac{90^\circ}{18} = 5^\circ$