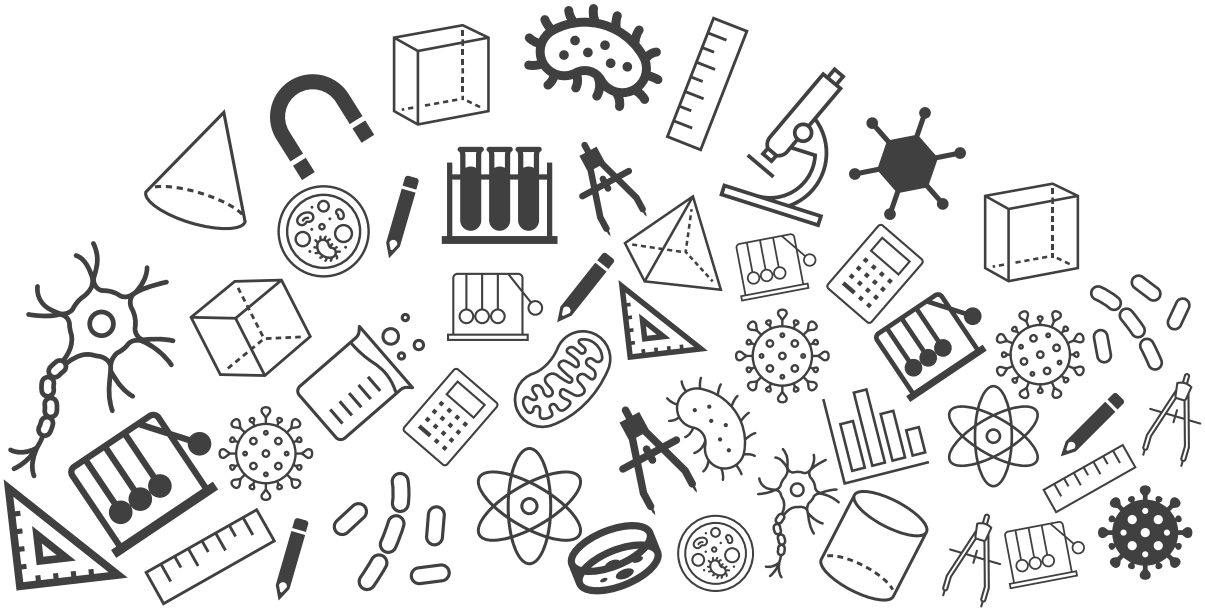
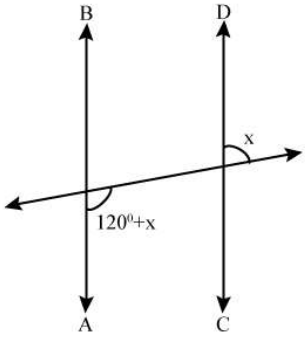
Grade 09: Maths
Exam Important Questions



Topic : Exam Important Questions

1. In the figure, if AB || CD, then value of x is



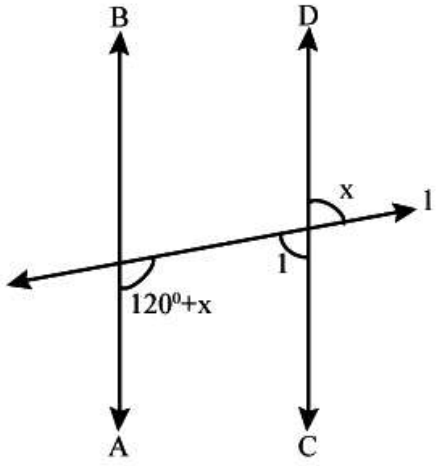
(2 Marks)

In the figure, AB||CD, and l is transversal

$\angle 1 = x$ (Vertically opposite angles)

and $120^0 + x + \angle 1 = 180^0$ $(1Mark)$

(Co-interior angles)



$\Rightarrow 120^0 + x + x = 180^0$

$\Rightarrow 2x = 180^0 - 120^0 = 60^0$

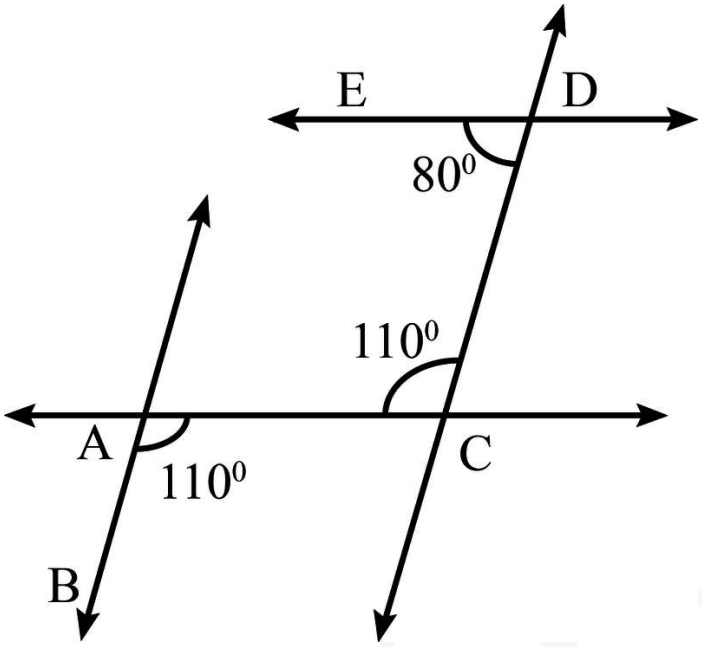
$\therefore x = \frac{60^0}{2} = 30^0$ $(1Mark)$

2. Two complementary angles are such that two times the measure of one is equal to three times the measure of the other. The measure of the smaller angle is _____.

(3 Marks)

Let first angle = x
Then its complementary angle = $90^0 - x$
$\therefore 2x = 3(90^0 - x)$ $(1Mark)$
$\Rightarrow 2x = 270^0 - 3x$
$\Rightarrow 2x + 3x = 270^0$
$\Rightarrow 5x = 270^0$
$\Rightarrow x = \frac{270^0}{5} = 54^0$ $(1Mark)$
$\therefore$ $Second\ angle = 90^0 - 54^0 = 36^0$
$\therefore$ $Smaller\ angle = 36^0$ $(1Mark)$

3. In the figure given below, state which lines are parallel and why?



(2 Marks)

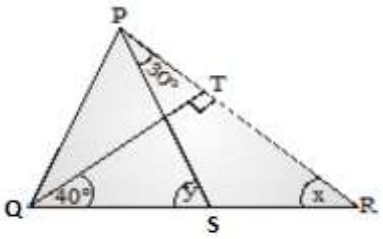
Here, ∠BAC = ∠ACD = 110°
Thus, lines AB and CD are intersected by a transversal AC such that the pair of alternate angles are equal.

∴ AB || CD (If a transversal intersects two lines such that a pair of alternate interior angles are equal, then thetwo lines are parallel)
(1 Mark)

Thus, line AB is parallel to line CD.
Also, ∠ACD + ∠CDE = 110° + 80° = 190° ≠ 180°

If a transversal intersects two lines such that a pair of interior angles on the same side of the transversal are
supplementary, then the two lines are parallel.
Therefore, line AC is not parallel to line DE. (1 Mark)

4. In figure, if QT is perpendicular to PR, $\angle TQR = 40^\circ$ and $\angle SPR = 30^\circ$, find x and y.



(2 Marks)

In ΔTQR,

$\angle TQR + \angle QTR + \angle QRT = 180^\circ$

$\Rightarrow 40^\circ + 90^\circ + x = 180^\circ$

$\Rightarrow x = 180^\circ - 130^\circ$

$\Rightarrow x = 50^\circ \qquad (1Mark)$

In ΔPSR

$y = x + 30^\circ$ (Sum of interior opposite angles is equal to to exterior angle)

$\Rightarrow y = 50^\circ + 30^\circ$

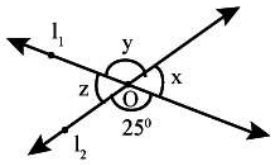
$\Rightarrow y = 80^\circ$

Hence,

$x = 50^\circ, y = 80^\circ \qquad (1Mark)$

5.

In the figure, find the values x,y and z.



(2 Marks)

Given: One angle at point O is 25°.

From the figure we can see that there are two lines l_1 and l_2 intersecting at point O and we have to find the value of x, y and z.

Now as we know, vertically opposite angles are equal. So, we have

$\therefore y = 25^\circ and\ x = z$ [0.5 Marks]

x + y = 180°

x + 25° = 180° (linear pair)

x = 180° - 25°

x = 155° [1 Mark]

$\Rightarrow x = 180^0 - 25^0 = 155^0$

$\therefore z = x = 155^\circ$

Hence $x = 155^\circ, y = 25^\circ, z = 155^\circ$ [0.5 Marks]