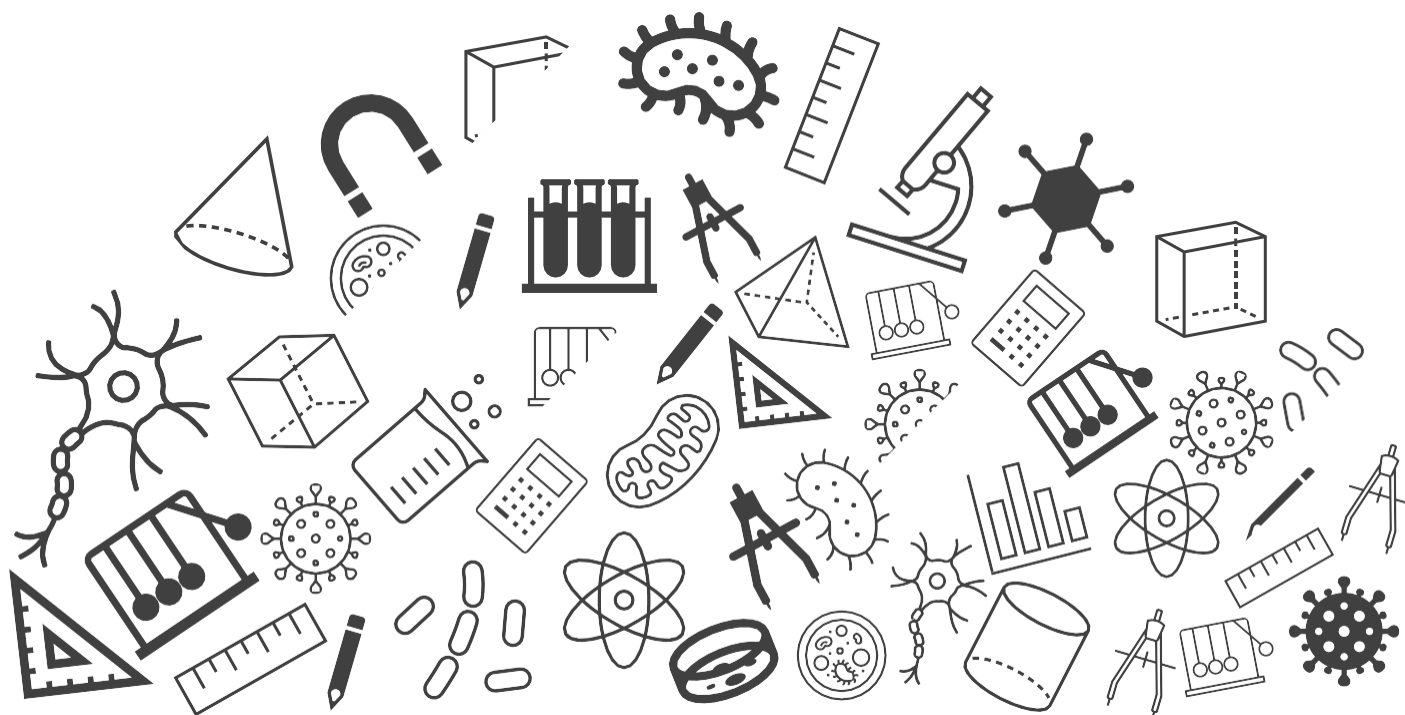




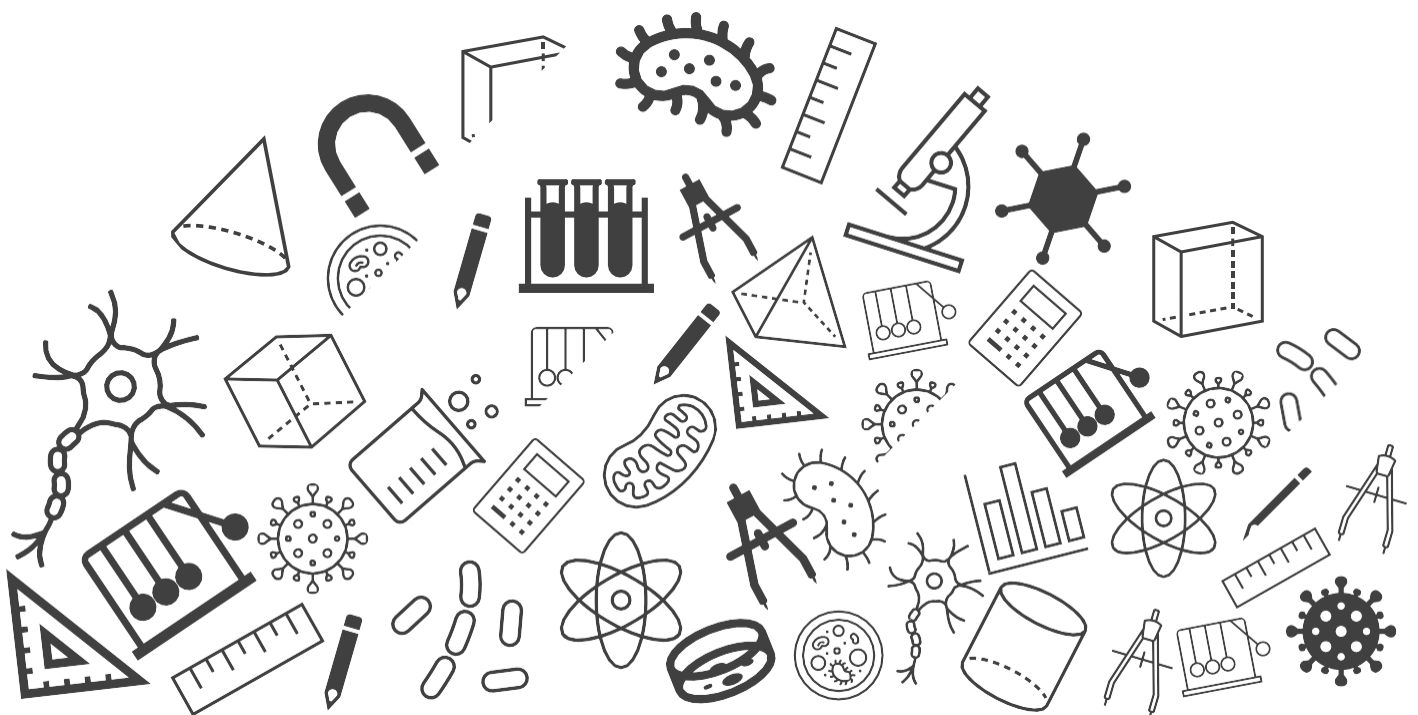
Grade 07: Maths

Exam Important Questions





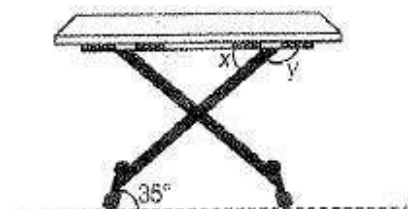
Lines and Angles



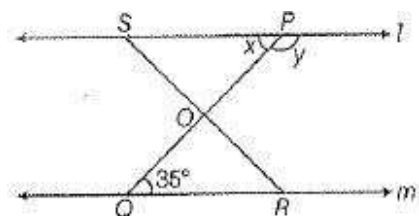
Lines and Angles

Topic : Exam Important Questions

1. The legs of a stool make an angle of 35° with the floor, as shown in the given figure. Find the measure of angles x and y .



[2 marks]



Since l, m are parallel lines and PQ is transversal,
 $\therefore x = \angle PQR$ [alternate interior angles]

$$\Rightarrow x = 35^\circ \quad [\because \angle PQR = 35^\circ]$$

[1 mark]

Again, $x + y = 180^\circ$ [linear pair]

$$\Rightarrow 35^\circ + y = 180^\circ$$

$$\Rightarrow y = 180^\circ - 35^\circ = 145^\circ$$

[1 mark]

Lines and Angles

2. Two angles are making a linear pair. If one of them is one-third of the other, then find the angles.
[2 marks]

Let one angle be x .

It is given that one angle is one-third of the other.

So, the other angle will be $\frac{1}{3}x$.

Again given that both the angle are making a linear pair so their sum will be 180°
[1 mark]

$$\therefore x + \frac{1}{3}x = 180^\circ$$

$$\Rightarrow \frac{3x+x}{3} = 180^\circ$$

$$\Rightarrow \frac{4x}{3} = 180^\circ$$

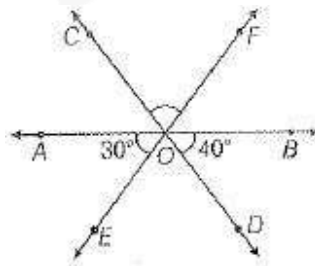
$$\Rightarrow x = \frac{180^\circ \times 3}{4}$$

$$\Rightarrow x = 135^\circ$$

Hence, the angles are 135° and $\frac{1}{3} \times 135^\circ = 45^\circ$

[1 mark]

3. Three lines AB, CD and EF intersect each other at O. If $\angle AOE = 30^\circ$ and $\angle DOB = 40^\circ$ (see the figure), find $\angle COF$.



[2 marks]

From the given figure,

$$\angle AOE + \angle EOD + \angle DOB = 180^\circ$$

[Angles on a straight line]

$$\Rightarrow 30^\circ + \angle EOD + 40^\circ = 180^\circ$$

$$\Rightarrow \angle EOD = 180^\circ - 70^\circ$$

$$\Rightarrow \angle EOD = 110^\circ$$

[1 mark]

$$\angle EOD = \angle COF$$

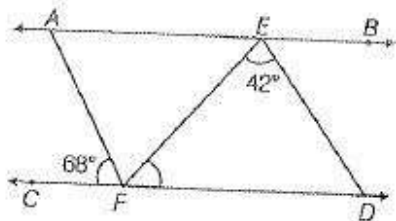
[Vertically opposite angles]

$$\Rightarrow \angle COF = 110^\circ$$

[1 mark]

Lines and Angles

4. In the given figure, $AB \parallel CD$, $AF \parallel ED$, $\angle AFC = 68^\circ$ and $\angle FED = 42^\circ$. Find $\angle EFD$.



[3 marks]

AF and ED are parallel and EF is transversal.

Then, $\angle AFE = \angle FED$ [alternate interior angles]

$$\Rightarrow \angle AFE = 42^\circ \quad [\because \angle FED = 42^\circ]$$

[1 mark]

Now, $\angle AFC + \angle AFE + \angle EFD = 180^\circ$ [\because Sum of all angles on a straight line is 180°]

$$\Rightarrow 68^\circ + 42^\circ + \angle EFD = 180^\circ$$

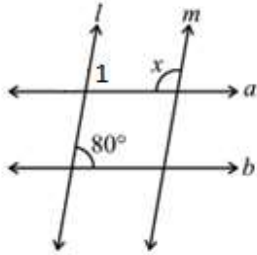
$$\Rightarrow 110^\circ + \angle EFD = 180$$

$$\Rightarrow \angle EFD = 180^\circ - 110^\circ = 70^\circ$$

[2 marks]

Lines and Angles

5. Find the measure of angle x in the given figure if $l \parallel m$ and $a \parallel b$.



[2 marks]

Given, $a \parallel b$ and $l \parallel m$

$$\angle 1 = 80^\circ \text{ [corresponding angles]}$$

[1 mark]

Now,

$$\angle 1 + \angle x = 180^\circ \text{ [cointerior angles]}$$

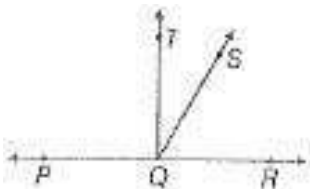
$$\Rightarrow \angle x = 180^\circ - 80^\circ$$

$$\Rightarrow \angle x = 100^\circ$$

[1 mark]

Lines and Angles

6. In the given figure P, Q and R are collinear points and $TQ \perp PR$.
- Pair of complementary angles.
 - Two pairs of supplementary angles.
 - Four pairs of adjacent angles.



[3 marks]

(i) Complementary angles are those whose sum is 90° .

$\therefore \angle TQS$ and angle SQR are the pair of complementary angles, as their sum is 90° .

[1 mark]

(ii) Supplementary angles are those whose sum is 180° .

$\therefore \angle SQR, \angle SQP; \angle TQR, \angle TOP$ are pairs of supplementary angles.

[1 mark]

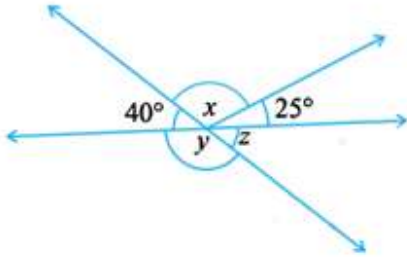
(iii) Two angles are called adjacent angles, if they have a common vertex and a common arm but no common interior points.

$\therefore \angle SQR, \angle SQT; \angle TQR, \angle TQP; \angle SQT, \angle TQP; \angle PQS, \angle SQR$ are pairs of adjacent angles.

[1 mark]

Lines and Angles

7. Find the values of the angles x , y and z in the following:



[3 marks]

$$40^\circ + x + 25^\circ = 180^\circ$$

[Angles on a straight line]

$$\Rightarrow 65^\circ + x = 180$$

$$\Rightarrow x = 180^\circ - 65^\circ = 115^\circ$$

[1 mark]

$$\text{Now, } 40^\circ + y = 180^\circ$$

[Linear pair]

$$\Rightarrow y = 180^\circ - 40^\circ = 140^\circ$$

[1 mark]

$$\text{Now, } y + z = 180^\circ$$

[Linear pair]

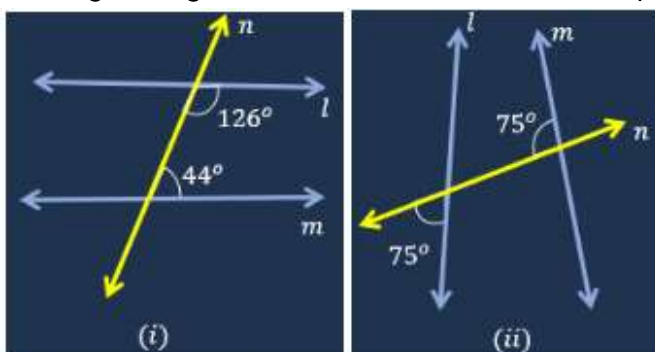
$$\Rightarrow 140^\circ + z = 180^\circ$$

$$\Rightarrow z = 180^\circ - 140^\circ = 40^\circ$$

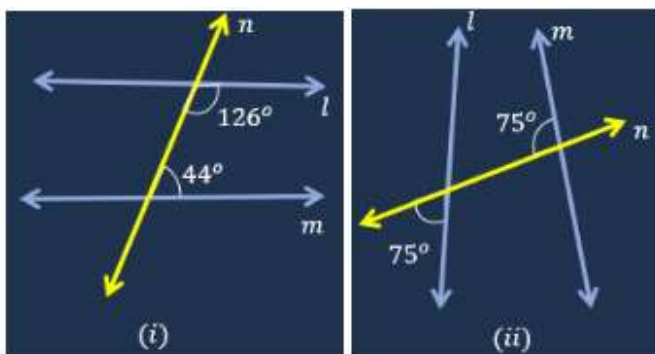
[1 mark]

Lines and Angles

8. In the given figures below, decide whether l is parallel to m .



[2 marks]



In the figure- (i),
 $126^\circ + 44^\circ = 170^\circ$
 And $170^\circ < 180^\circ$

So, the sum of co-interior angles is less than 180° .

We know that when lines are parallel, co interior angles are supplementary.

But in the given figure co interior angles are not supplementary.

So, the lines l and m are not parallel.

[1 mark]

In the figure- (ii),
 $75^\circ + 75^\circ = 150^\circ$
 And $150^\circ < 180^\circ$

So, the sum of co-interior angles is less than 180° .

We know that when lines are parallel, co interior angles are supplementary.

But in the given figure co interior angles are not supplementary.

So, the lines l and m are not parallel.

[1 mark]