MATHS

WORKSHEET_150424

CHAPTER 06 LINES AND ANGLES

SUBJECT: MATHEMATICS **MAX. MARKS : 40**

CLASS : IX **DURATION : 1½ hrs**

General Instructions:

(i). **All** questions are compulsory.

(ii). This question paper contains 2**0** questions divided into five Sections A, B, C, D and E.

(iii). **Section A** comprises of **10 MCQs** of **1 mark** each. **Section B** comprises of 4 questions of **2 marks** each. **Section C** comprises of 3 questions of **3 marks** each. **Section D** comprises of 1 question of **5 marks** each and **Section E** comprises of 2 Case Study Based Questions of **4 marks** each.

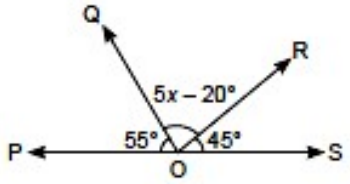
(iv). There is no overall choice.

(v). Use of Calculators is not permitted

SECTION – A

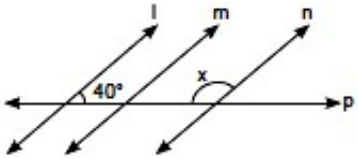
Questions 1 to 10 carry 1 mark each.

1. In the given figure, POS is a line, then ∠QOR is



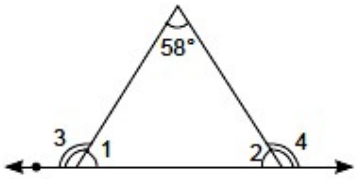
(a) 60° (b) 40° (c) 80° (d) 20°

2. In the given figure, l||m||n. Then value of x is



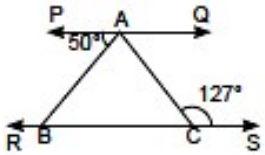
(a) 40° (b) 50° (c) 140° (d) 130°

3. In the given figure, ∠1 = ∠2 then the measurements of ∠3 and ∠4 respectively are



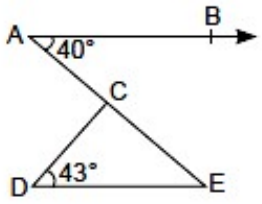
(a) 58°, 61° (b) 61°, 61° (c) 119°, 61° (d) 119°, 119°

4. In the given figure, PQ || RS and ∠ACS = 127°, ∠BAC is



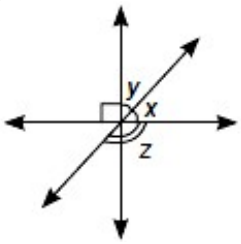
(a) 53° (b) 77° (c) 50° (d) 107°

5. In the given figure, AB || DE, then measure of ∠ACD is



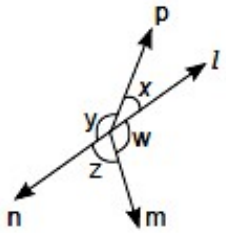
(a) 43° (b) 40° (c) 83° (d) 97°

6. In the given figure, if the angles x and y are in the ratio 2 : 3, then angle z is



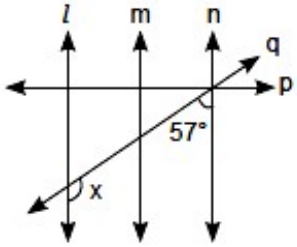
(a) straight angle (b) 144° (c) 126° (d) 90°

7. In the given figure, ∠x = 20°, ∠y = 160°, ∠w = 105°, ∠z = 75°.



Indicate the correct option.
(a) ray m and ray n are opposite rays (b) ray l and ray n are opposite rays
(c) ray p and ray n are opposite rays (d) none of these

8. In the given figure, line l || line m || line n, line p and line q are transversals . Then , measurement of ∠ x is



(a) 57° (b) 43° (c) 150° (d) 123°

In the following questions 9 and 10, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

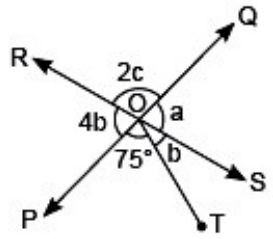
9. **Assertion (A):** If a ray $\overrightarrow{CD}$ stands on a line $\overrightarrow{AB}$, such that ∠ACD = ∠BCD, then ∠ACD = 45°.
Reason (R): If a ray $\overrightarrow{CD}$ stands on a line $\overrightarrow{AB}$ then ∠ACD + ∠BCD = 180°.

10. **Assertion (A):** If angles 'a' and 'b' form a linear pair of angles and a = 40°, then b = 140°.
Reason (R): Sum of linear pair of angles is always 180°.

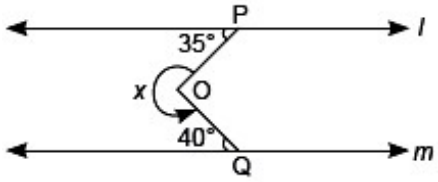
SECTION – B

Questions 11 to 14 carry 2 marks each.

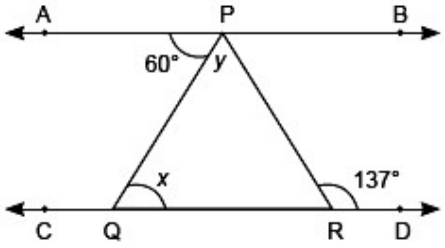
11. In the given figure, two straight lines PQ and RS intersect each other at O. If ∠POT = 75°. Find the value of *a*, *b* and *c*.



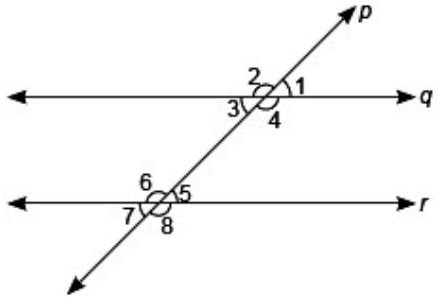
12. In the given figure, if *l* || *n*, find the value of *x*.



13. In the given figure, if AB || CD, ∠APQ = 60° and ∠PRD = 137°, then find the value of *x* and *y*.



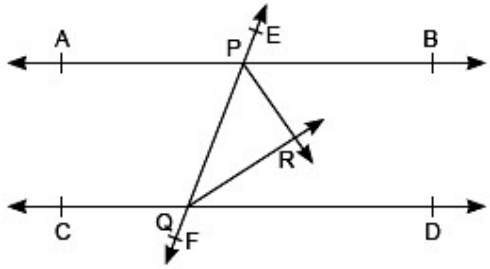
14. In the given figure, *p* is transversal to *q* and *r*. Given *q* || *r* and ∠1 = 75°. Find ∠6 and ∠7.



SECTION – C

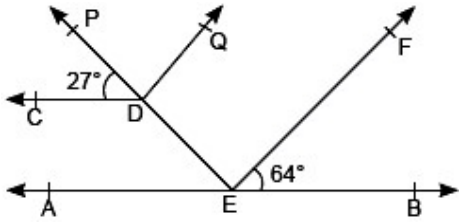
Questions 15 to 17 carry 3 marks each.

15. In the given figure, AB and CD are two parallel lines intersected by a transversal EF. Bisector of interior angles BPQ and DQP intersect at R. Prove that ∠PRQ = 90°

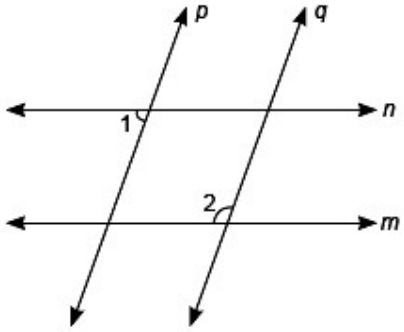


OR

In the given figure, EF || DQ and AB || CD. If ∠FEB = 64°, ∠PDC = 27°, then find ∠PDQ, ∠AED and ∠DEF.

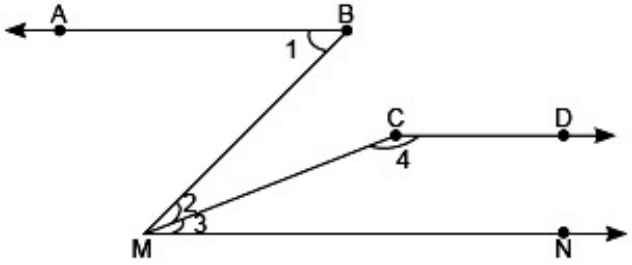


16. In the given figure, $n \parallel m$ and $p \parallel q$ of $\angle 1 = 75°$, prove that $\angle 2 = \angle 1 + \frac{1}{3}$ of a right angle.

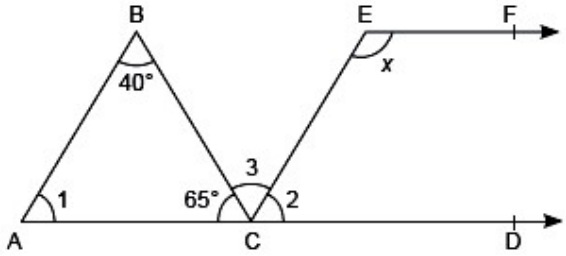


OR

In the given figure, $\angle 1 = 55°$, $\angle 2 = 20°$, $\angle 3 = 35°$ and $\angle 4 = 145°$. Prove that AB || CD.



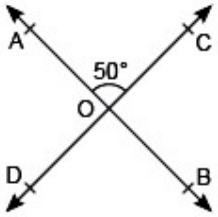
17. In the figure, AB || CE, CD || EF. Find the value of x.



SECTION – D

Questions 18 carry 5 marks.

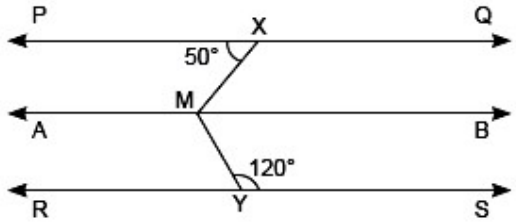
18. (a) Prove that "If two lines intersect each other, the vertically opposite angles are equal." (4)
(b) In the given figure, if ∠AOC = 50° then find the measure of (∠AOD + ∠COB). (1)



SECTION – E (Case Study Based Questions)

Questions 19 to 20 carry 4 marks each.

19. Two parallel roads PQ and RS are at the center of the city. It was decided to put two huge lamp posts at point X and Y and a statue of Mahatma Gandhi to be placed at point M with lots of palm trees to be planted along the line AB which is parallel to both PQ and RS. The area around M is to be decorated with flowering plants and greenery. The angle ∠PXY is of 50° and angle ∠MYS is of 120°



Based on the above information answer the following questions :

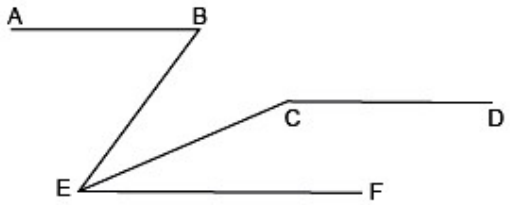
(a) What is the measure of ∠XMB?

(b) What is the measure of the angle ∠YMB?

(c) What is the measure of the reflex angle ∠XMY?

(d) What is ratio between the angles ∠XMB and ∠YMB?

20. Three book shelves AB, CD and EF, made up of wooden boards are fitted on the wall horizontal to the floor as shown in the figure. To give stability and a good look the two shelves AB and CD were joined by a wooden plank BE. Similarly CD and EF were joined by CE. The entire arrangement was such that the angles measured as follows: ∠ABE = 66°, ∠BEC = 36°, ∠CEF = 30°, ∠DCE = 150°



Based on the above information and the given figure answer the following questions:

(a) What is the measure of angle ∠BEF ?

(b) What is the relation between AB and EF ?

(c) What is the relation between ∠DCE and ∠CEF?

(d) What can we conclude about CD and EF?