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PRACTICE PAPER 07 (2024-25)

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.

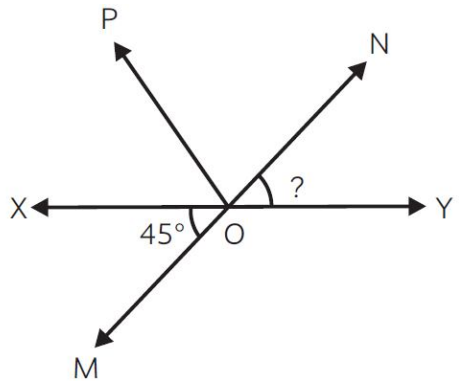
1. Aditya was given a riddle by Pragya who stated that an angle is 24° less than its complementary angle. The angle's measure is:

(a) 36° (b) 33° (c) 66° (d) 57°

2. If the ratio of two co-interior angles on the same side of the transversal is 7 : 8, the bigger angle of the two angles is:

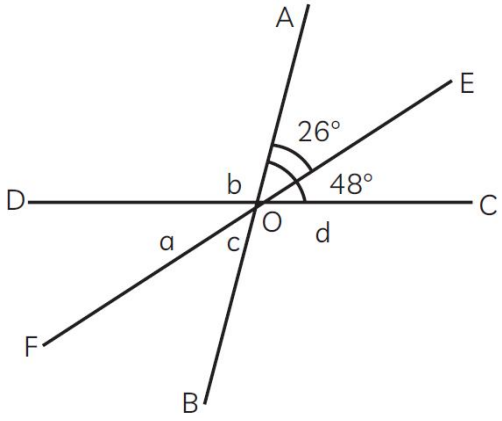
(a) 54° (b) 100° (c) 96° (d) 84°

3. In the given figure, lines XY and MN intersect at O. If ∠XOP + ∠YON = 85° and ∠XOM = 45°, ∠YON is:



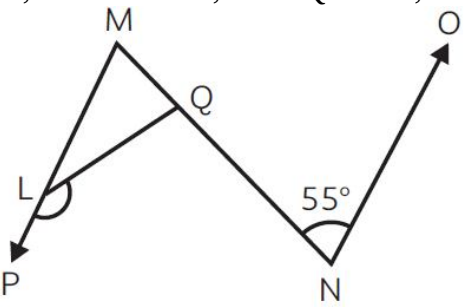
(a) 55° (b) 45° (c) 75° (d) 65°

4. In the adjoining figure, if ∠AOC = 48°, then the value of a is:



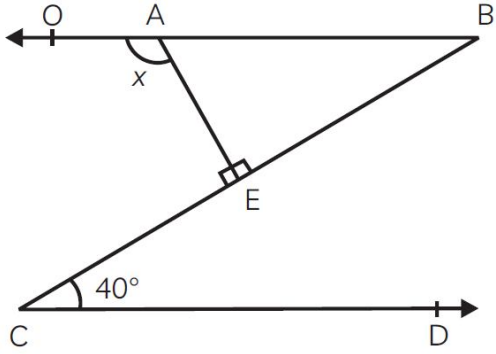
(a) 26° (b) 22° (c) 42° (d) 24°

5. In the given figure, if PM || NO, ∠MNO = 55°, and LQ ⊥ MN, then ∠PLQ is equal to:



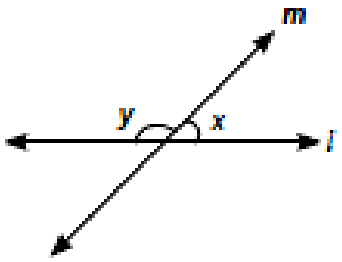
(a) 110° (b) 125° (c) 145° (d) 115°

6. In the given figure, if OB || CD, ∠BCD = 40° and AE ⊥ BC then ∠OAE is equal to:



(a) 110° (b) 135° (c) 130° (d) 115°

7. In figure if x : y = 1 : 4, then values of x and y are respectively



(a) 36° and 144° (b) 18° and 72° (c) 144° and 36° (d) 72° and 18°

8. An angle is 20° more than three times the given angle. If the two angles are supplementary, then the angles are

(a) $\frac{70^0}{4}, \frac{290^0}{4}$ (b) 40°, 140° (c) 60°, 120° (d) 40°, 50°

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.

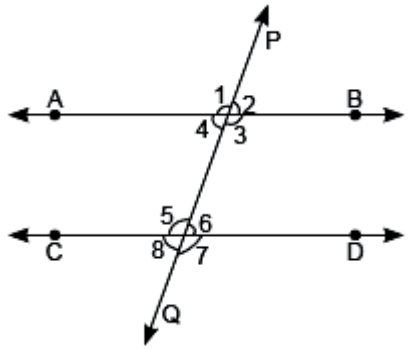
9. **Assertion (A):** Two adjacent angles always form a linear pair.
Reason (R): In a linear pair of angles, two non-common arms are opposite rays.

10. **Assertion (A):** If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 5 : 4, then the greater of the two angles is 100^0.
Reason (R): If a transversal intersects two parallel lines, then the sum of the interior angles on the same side of the transversal is 180^0.

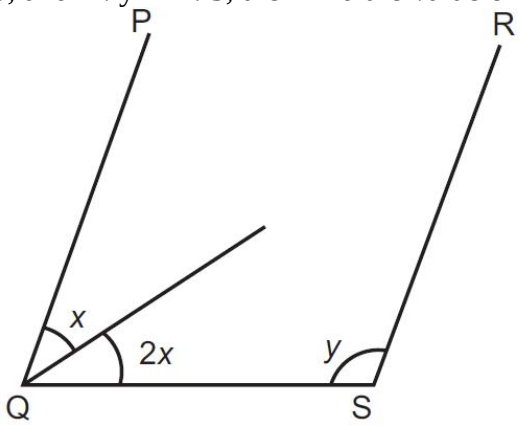
SECTION – B

Questions 11 to 14 carry 2 marks each.

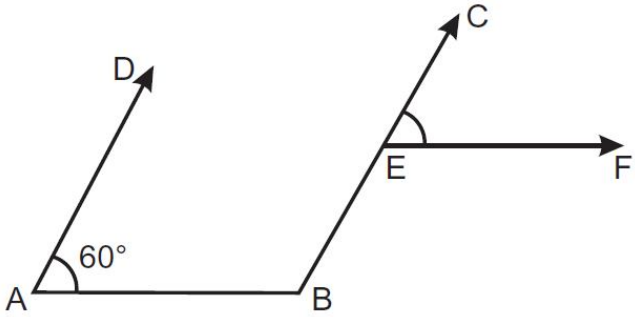
11. In the given figure, AB || CD, $\angle 2 = 120° + x$ and $\angle 6 = 6x$. Find the measure of $\angle 2$ and $\angle 6$.



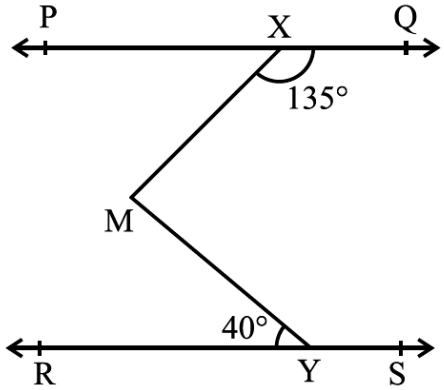
12. In the given figure, PQ || RS, and x : y = 2 : 3, then find the value of y.



13. In given figure, AD || BC and EF || AB. ∠DAB = 60°. Find ∠CEF.



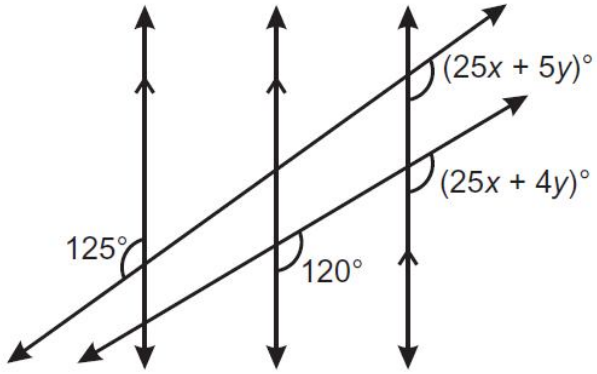
14. In the below figure, if PQ || RS, ∠ MXQ = 135° and ∠ MYR = 40°, find ∠ XMY.



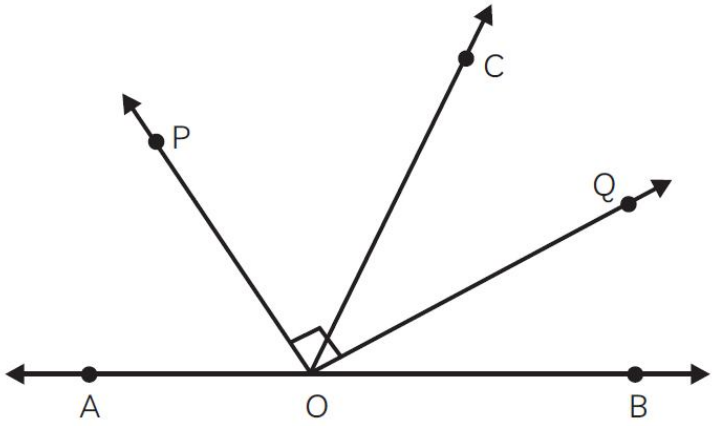
SECTION – C

Questions 15 to 17 carry 3 marks each.

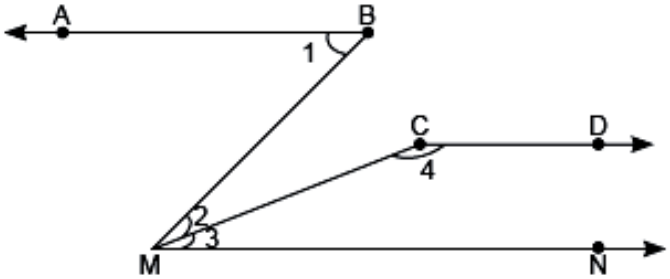
15. While playing piano Arijit Singh's daughter found that the treble strings of a grand piano are parallel. When view from the above, the bass strings are transversal. Find the x and y in the figure given below.



16. In figure, OP bisects ∠AOC, OQ bisects ∠BOC and OP ⊥ OQ. Show that the points A, O and B are collinear.



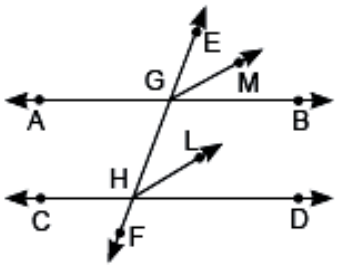
17. In the given figure, ∠1 = 55°, ∠2 = 20°, ∠3 = 35° and ∠4 = 145°. Prove that AB || CD.



SECTION – D

Questions 18 carry 5 marks.

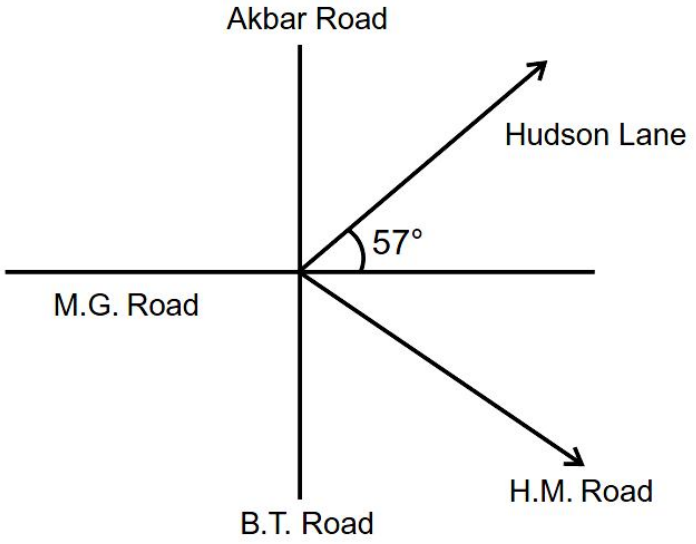
18. In the given figure, EF is the transversal to two parallel lines AB and CD. GM and HL are the bisectors of the corresponding angles EGB and EHD. Prove that GM || HL.



SECTION – E (Case Study Based Questions)

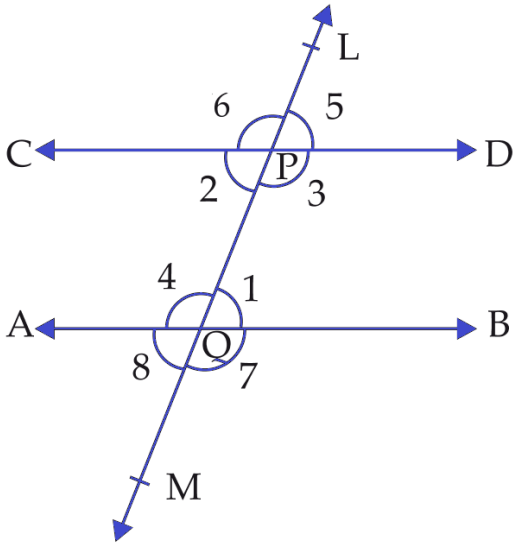
Questions 19 to 20 carry 4 marks each.

19. Ritesh and Sheetal are cousins and both went to visit Mughal Garden. Before going, they searched the location of their destination on a map. During searching, they found on map that Akbar Road and M.G. road form a right angle at their intersection point and Hudson lane form 57° angle with M.G. road.



(a) What is the measure of acute angle between Akbar Road and Hudson lane? [1]
(b) If Ritesh is standing on M.G Road in the west direction and Sheetal is on H.M road, what is the shortest angle they can cover in order to meet? [2]
(c) Find the measure of reflex angle formed between M.G Road [in east direction] with Hudson lane. [1]

20. Two lines are parallel to each other, if the distance between these 2 lines always remains constant throughout and they never meet. There are various examples of parallel lines that we see in our daily life like railway line, 2 steps of ladder, opposite sides of a table etc. A line which cuts a pair of parallel lines is called a transversal as shown in the figure.



Answer the following questions:

(a) If ∠5 = 65°. Then what is the ∠8? (1)

(b) If ∠6 = 2x and ∠1 = 70°. Then find the value of x. (1)

(c) If $\angle 6 : \angle 5 = 2 : 3$ then find the value of $\angle 7$. (2)