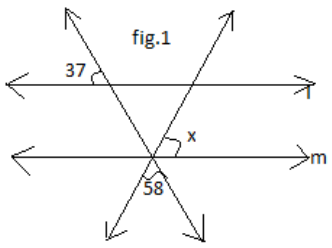
INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF MATHEMATICS
CLASS IX
WORKSHEET NO. 3
LINES AND ANGLES

SECTION A: (1 MARK)

1.	An angle is 20° more than three times the other angle. If the two angles are supplementary, find the angles.	40°, 140°
2.	If a wheel has six spokes equally spaced, then find the measure of the angle between two adjacent spokes.	60°
3.	An exterior angle of a triangle is 105° and its two interior opposite angles are equal. Find each of these equal angles.	52 ½ °
4.	If two times the measure of one angle is three times the other which is complement, find the angles.	36°, 54°
5.	In fig.2, AB||CD and ∠ F = 30° find ∠ ECD.	120°

SECTION B: (2 MARKS)

6. In ΔABC, the bisectors of ∠ABC and ∠ BCA , intersect each other at point O. If ∠ BOC = 100° , find the ∠ A. — 20°



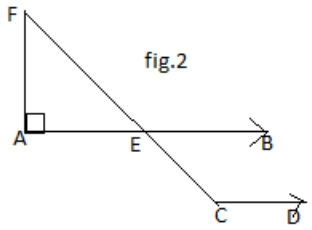
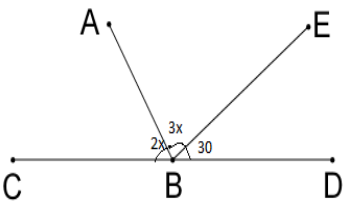


Fig.3



7.	In fig.1, if l || m , what is the value of x	85°
8.	The exterior angles obtained on producing the base of a triangle both ways are 100° and 120°. Find all the angles (CCE 2011)	80°, 60°, 40°
9.	In fig.3, find ∠ABE.	90°

SECTION C: (3 MARKS)

10.	ΔABC in which BC is produced to D. If $\angle A : \angle B : \angle C = 3:2:1$ and AC⊥ CE. Find ∠ECD.	60°
11.	The sum of two angles of a triangle is 80° and their difference is 20°. Find all the angles.	50°,30°, 100°

12. An exterior angle of a triangle measures 140°. If the interior opposite angles are in the ratio 3: 1 then find the angles of the triangle — 35°,40°, 105°

13. If the angles of a triangle are (2x – 30)° , (3x – 50)° and (x + 20)°, find the value of x and angles of the triangle. — 50°,70°, 60°

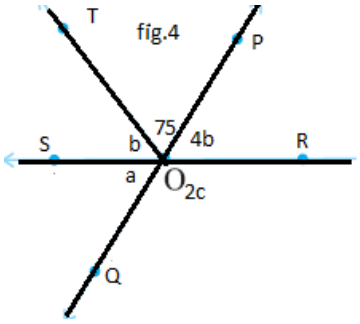


fig.4

Fig(i)

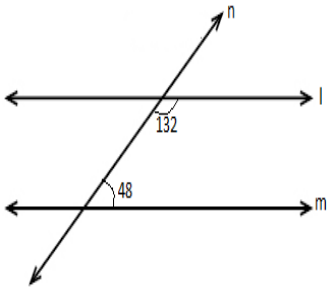
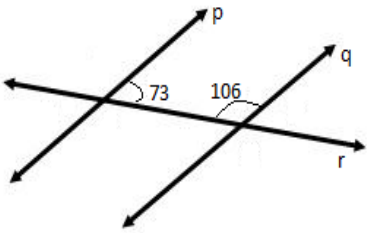


Fig (ii)



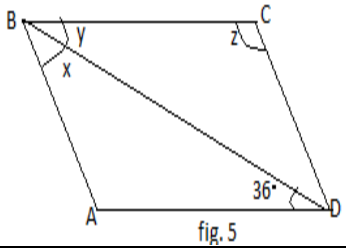


fig. 5

SECTION D: (4 MARKS)

13. If the bisectors of the angles B and C of ΔABC meet at a point O, then prove that $\angle BOC = 90° + ½ \angle A$

14. In fig.4, lines PQ and RS intersect at O. If $\angle POT = 75°$, find a, b and c. — **84°, 21°, 48°**

15. In the given figs (i) and (ii) , which of the two lines are parallel and justify your answer. — **YES, NO**

16. In fig.5, AB||DC. If x = $\frac{4y}{3}$ and y = $\frac{3z}{8}$, find ∠ BCD, ∠ ABC and ∠ BAD. Also check whether BC is parallel to AD. — **96°,84°, 96°,yes**

17. AB and CD are two parallel lines. The bisectors of the interior angles on the same side of the transversal EF intersect each other at the point P. Prove that $\angle MPN = 90°$

18. In ΔABC, AD and CE are the bisectors of $\angle A$ and $\angle C$ respectively meet at O. If $\angle ABC = 90°$, then find $\angle AOC$. — **135°**

(CBSE 2011)
