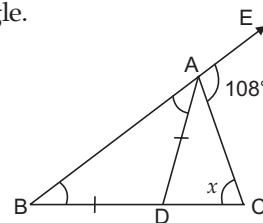# WORKSHEET 6

CHAPTER 6 – LINES AND ANGLES

1. If two straight lines intersect each other in such a way that one of the angles formed measures 90°, show that each of the remaining angles measures 90°.

2. Show that the bisectors of the base angles of a triangle can never enclose a right triangle.

3. In the given figure, AD divides ∠BAC in the ratio 1 : 3 and AD = DB. Determine the value of x.

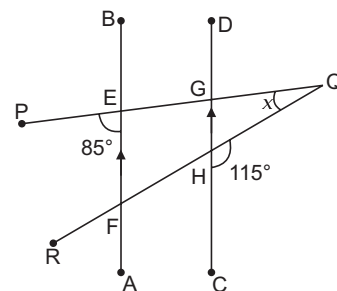4. Find the complement of each of the following angles:
   (i) 58°
   (ii) 16°
   (iii) $\frac{2}{3}$ of a right angle
   (iv) $\frac{1}{9}$ of a right angle.

5. Find the measure of an angle which is
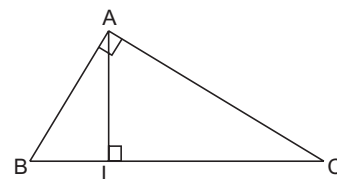   (i) equal to its complement
   (ii) equal to its supplement

6. In the given figure, AB is a mirror, PQ is the incident ray and QR, the reflected ray. If ∠PQR = 112°, find ∠PQA.
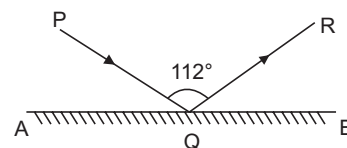
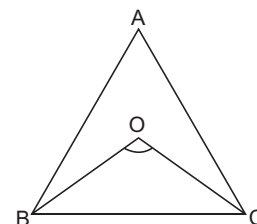7. In the given figure, AB ∥ CD. Find the value of x.

8. ∆ABC is right angled at A. If AL ⊥ BC, prove that ∠BAL = ∠ACB.

9. In ∆ABC, the angle bisectors of ∠B and ∠C meet at O. If ∠A = 70°, find ∠BOC.

Name: ....

Class: ....IX...

Teacher's signature: ....

Date: ....
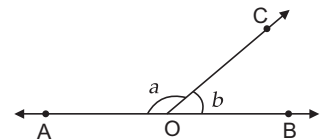
10. In the given figure, ray OC is the bisector of ∠AOB and OD is the ray opposite to OC. Show that ∠AOD = ∠BOD.
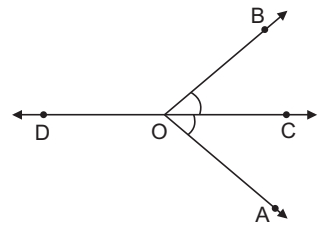
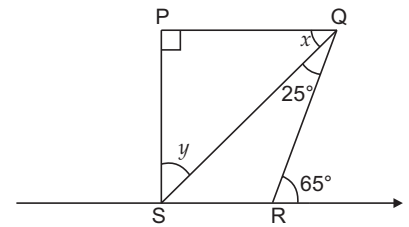11. In each of the following figures, AB ∥ CD. Find the value of x in each case.
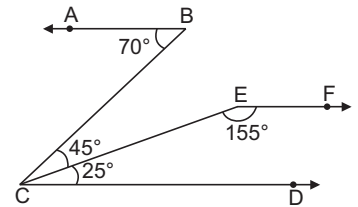
(i)

104°

E x

116°

(ii)

40°

x O

35°
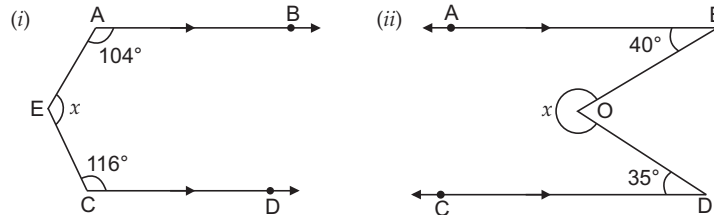
12. In the given figure, ∠AOC and ∠BOC form a linear pair. If $a - b = 80°$, find the values of a and b.

13. In the given figure, ∠SQR = 25°, ∠QRT = 65°, find x and y.

14. Consider the adjoining figure: Prove that AB ∥ EF.

15. In the figure, $l \parallel m$, show that $\angle 1 + \angle 2 - \angle 3 = 180°$.
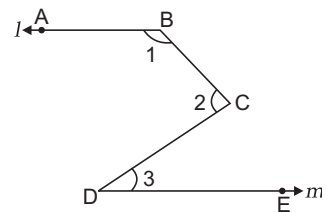
16. (i) Find the measure of an angle which is 36° more than its complement.
    (ii) Find the angle which is five times its supplement.
    (iii) Find the angle whose supplement is four times its complement.
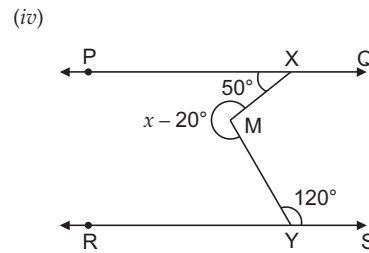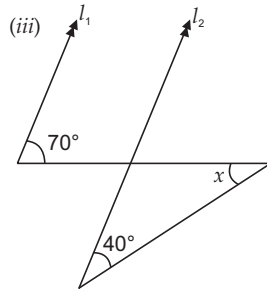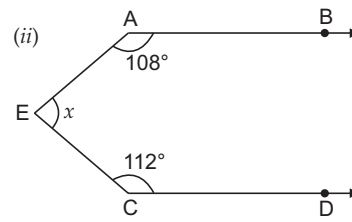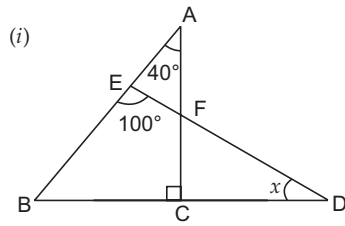   (iv) Two supplementary angles are in the ratio 3 : 2. Find the angles.

17. In the given figure, AB ∥ CD. Find the value of x.

© Ratna Sagar
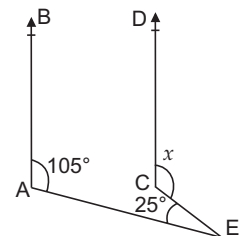
18. In ∆PQR, if ∠P − ∠Q = 42° and ∠Q − ∠R = 21°, find ∠P, ∠Q and ∠R.

19. Calculate the value of x, in each of the following figures:

(i)

(ii)

(iii)

(iv)

20. In the figure, two straight lines PQ and RS intersect each other at O. If ∠POT = 75°, find the values of a, b and c.
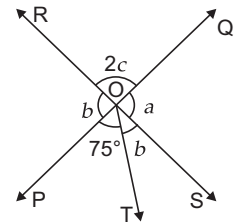
WORKSHEET 6

4. (*i*) 32°   (*ii*) 74°   (*iii*) 30°   (*iv*) 10°

5. (*i*) 45°   (*ii*) 90°

7. $x = 20$

9. 125°

11. (*i*) $x = 140$ (*ii*) $x = 285$

12. $a = 130°$, $b = 50°$

13. $x = 40°$, $y = 50°$

16. (*i*) 63°   (*ii*) 150°   (*iii*) 60°   (*iv*) 108°, 72°

17. $x = 130$

18. $\angle P = 95°$, $\angle Q = 53°$, $\angle R = 32°$

19. (*i*) 30°   (*ii*) 140°   (*iii*) 30°   (*iv*) 270°

20. $a = 84$, $b = 21$ and $c = 48$