EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Tangent Properties of Circles

Grade : ICSE Grade X

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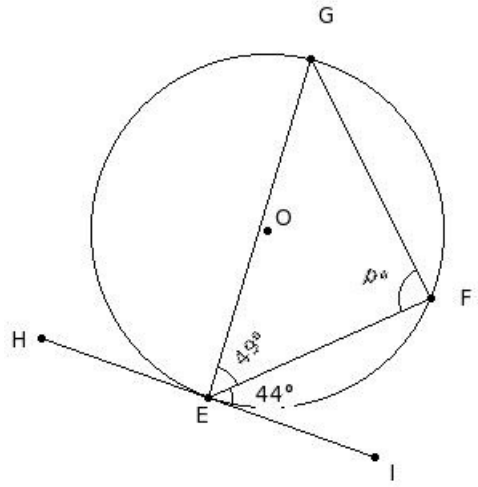
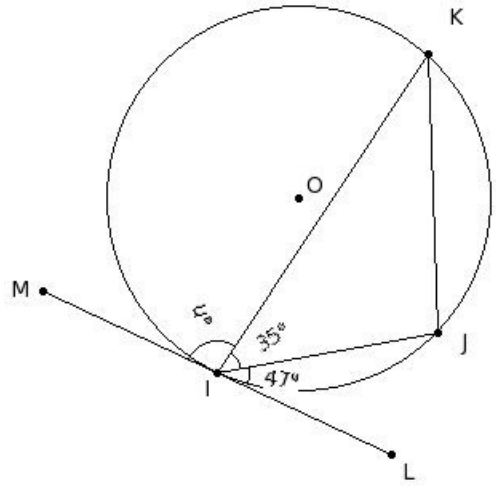
1. In the given figure, O is the centre of the circle and HI is the tangent at E. If ∠GEF = 49° and ∠FEI = 44°, find ∠GFE



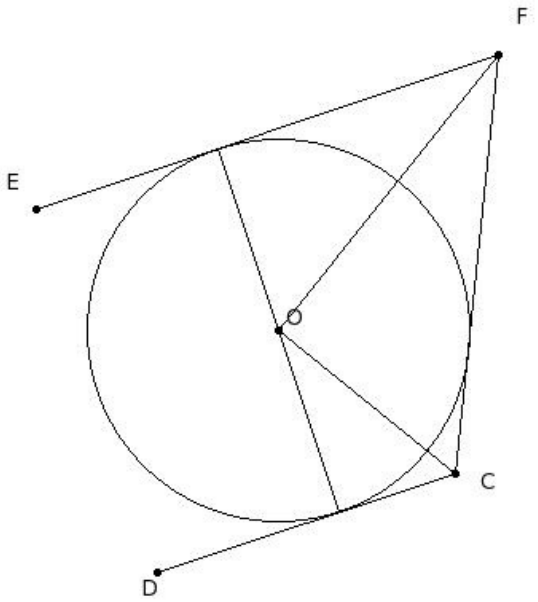
(i) 117° (ii) 97° (iii) 87° (iv) 92° (v) 102°

2. In the given figure, O is the centre of the circle and LM is the tangent at I. If ∠JIK = 35° and ∠LIJ = 47°, find ∠KIM



(i) 113° (ii) 103° (iii) 98° (iv) 108° (v) 128°

3. In the given figure, CD and EF are parallel tangents to the circle with centre O. CF is another tangent meeting CD and EF at C and F. Find ∠COF

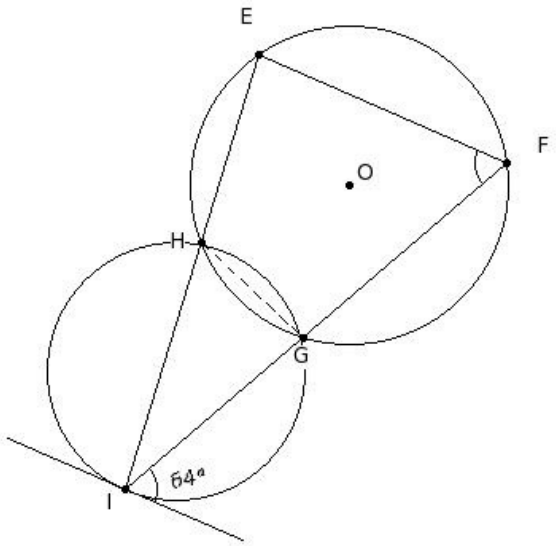


(i) 100° (ii) 120° (iii) 90° (iv) 105° (v) 95°

4. A line which touches a circle at only one point is called a

(i) tangent (ii) semi-circle (iii) circumference (iv) diameter (v) secant

5. In the given figure, two circles intersect at points G & H. A tangent is drawn at point I. From the same point, two lines are drawn passing through points G & H. They meet the other end of the second circle at F & E. Given ∠I = 64°, find ∠EFG



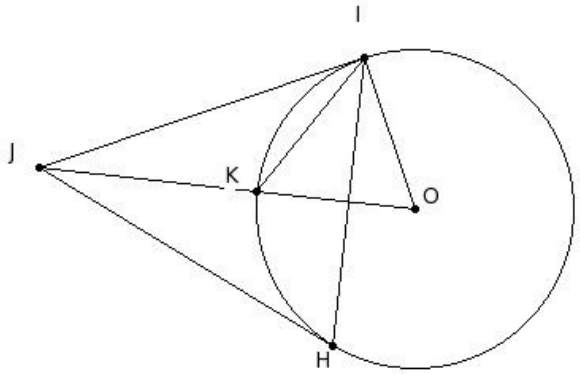
(i) 94° (ii) 74° (iii) 69° (iv) 79° (v) 64°

6. Which of the following statements are true?

a) Atmost one common tangent can be drawn for any two concentric circles.
b) Atmost two common tangents can be drawn touching any two circles.
c) Atmost three common tangents can be drawn touching two circles which touch each other.
d) A maximum of four common tangents can be drawn touching any two circles.

(i) {b,d} (ii) {c,d} (iii) {a,c} (iv) {a,d,c} (v) {a,b,c}

7. In the given figure, JH and JI are tangent segments to the circle with centre O. Given ∠IJK = 25°, find ∠HIK



(i) 32.5° (ii) 62.5° (iii) 37.5° (iv) 42.5° (v) 47.5°

8. Which of the following statements are true?

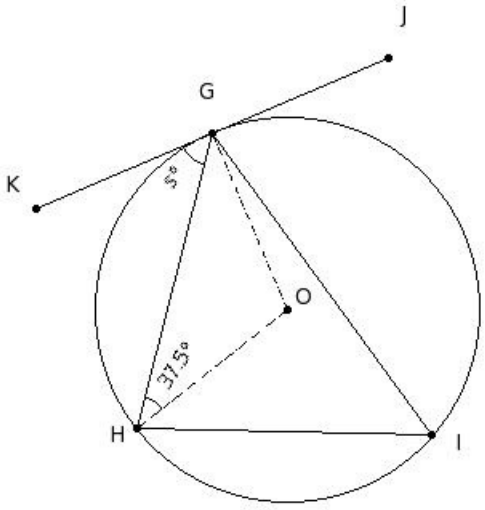
a) A line parallel to a tangent is a secant.
b) If two tangents to a circle intersect, their points of contact with the circle together with their point of intersection form an isosceles triangle.
c) If two tangents are perpendicular, they form a right angled triangle with their points of contact with the circle and their point of intersection.
d) If two tangents are parallel, the distance between them is equal to the diameter of the circle.
e) Two different tangents can meet at a point on the circle.

(i) {a,b} (ii) {a,e,d} (iii) {b,c,d} (iv) {a,b,c} (v) {e,c}

9. If the two radii OP and OQ of a circle are at right angles to each other, then the sector OPQ is called a

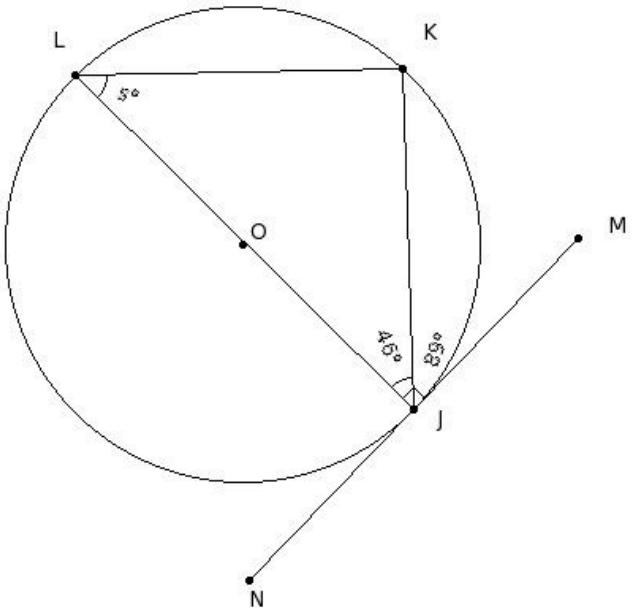
(i) radius (ii) diameter (iii) quadrant (iv) circumference (v) centre

10. In the given figure, O is the centre of the circle and JK is the tangent at G. If ∠OHG = 37.5°, find ∠KGH



(i) 82.5° (ii) 52.5° (iii) 57.5° (iv) 67.5° (v) 62.5°

11. In the given figure, O is the centre of the circle and MN is the tangent at J. If ∠KJL = 46° and ∠MJK = 89°, find ∠JLK

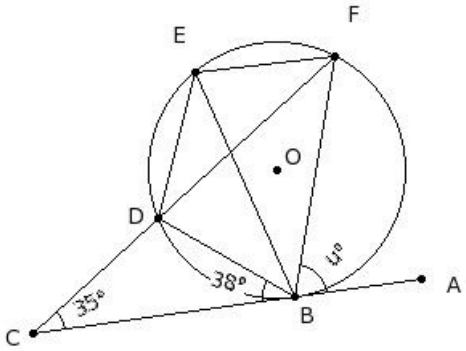


(i) 43° (ii) 48° (iii) 53° (iv) 73° (v) 58°

12. If two circlestouch externally, the number of their common tangents is

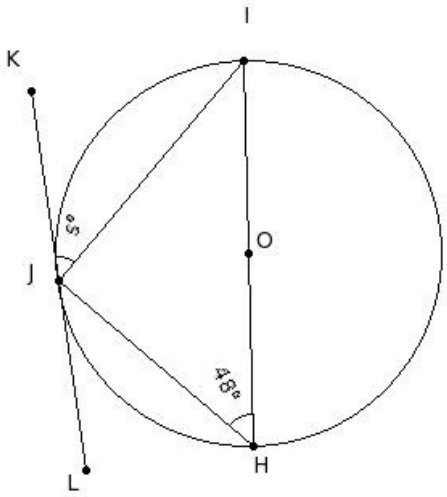
(i) 6 (ii) 4 (iii) 2 (iv) 1 (v) 3

13. In the given figure, O is the centre of the circle and AC is the tangent at B. If ∠BCD = 35°,∠CBD = 38°, find ∠FBA



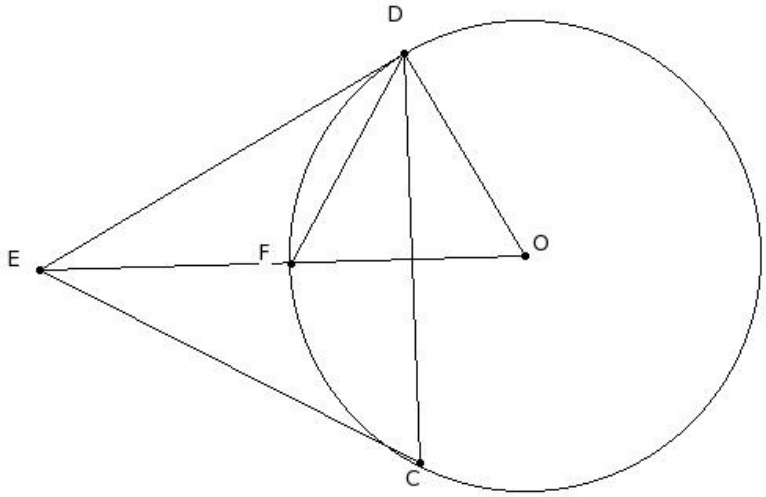
(i) 103° (ii) 88° (iii) 83° (iv) 78° (v) 73°

14. In the given figure, O is the centre of the circle and KL is the tangent at J. If ∠JHI = 48°, find ∠KJI



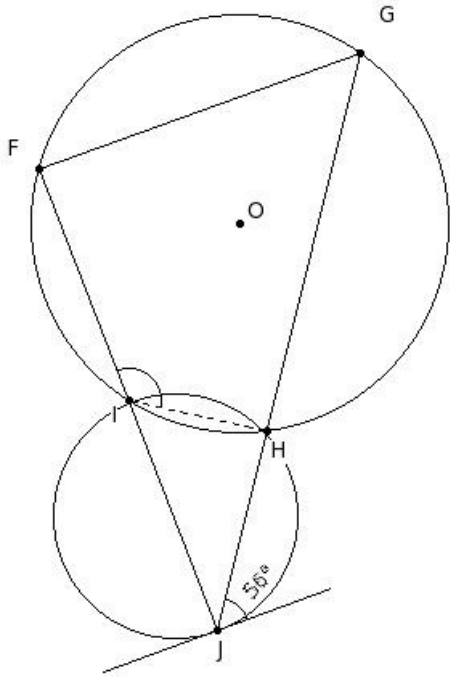
(i) 78° (ii) 58° (iii) 53° (iv) 63° (v) 48°

15. In the given figure, EC and ED are tangent segments to the circle with centre O. Given ∠DEF = 29°, find ∠CDO



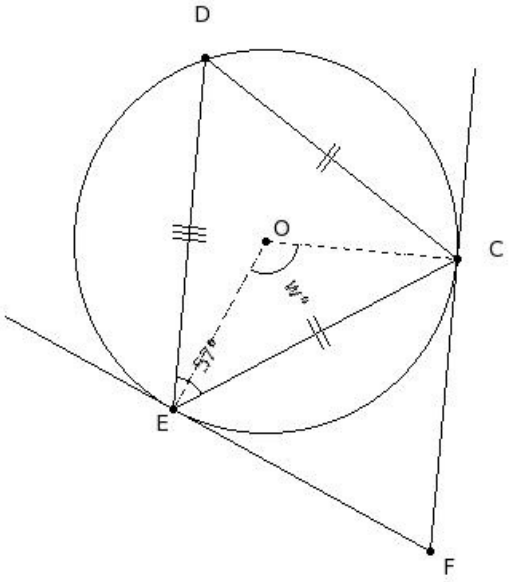
(i) 59° (ii) 29° (iii) 34° (iv) 44° (v) 39°

16. In the given figure, two circles intersect at points H & I. A tangent is drawn at point J. From the same point, two lines are drawn passing through points H & I. They meet the other end of the second circle at G & F. Given ∠J = 56°, find ∠FIH



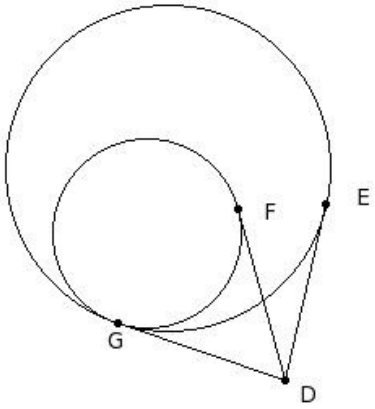
(i) 154° (ii) 134° (iii) 124° (iv) 139° (v) 129°

17. In the given figure, O is the centre of the circle and the tangents CF and EF meet at point F. If ∠DEC = 57°, find ∠COE



(i) 114° (ii) 119° (iii) 129° (iv) 144° (v) 124°

18. In the given figure, DG is the common tangent to the two circles. DE & DF are also tangents. Given DE = 11 cm, find DF

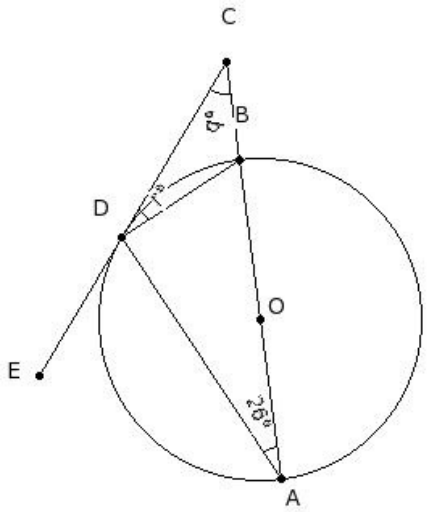


(i) 11 cm (ii) 13 cm (iii) 9 cm (iv) 12 cm (v) 10 cm

19. If 'l' is the length of the tangent drawn to a circle with radius 'r' from point 'P' which is 'd' cm away from the centre, then

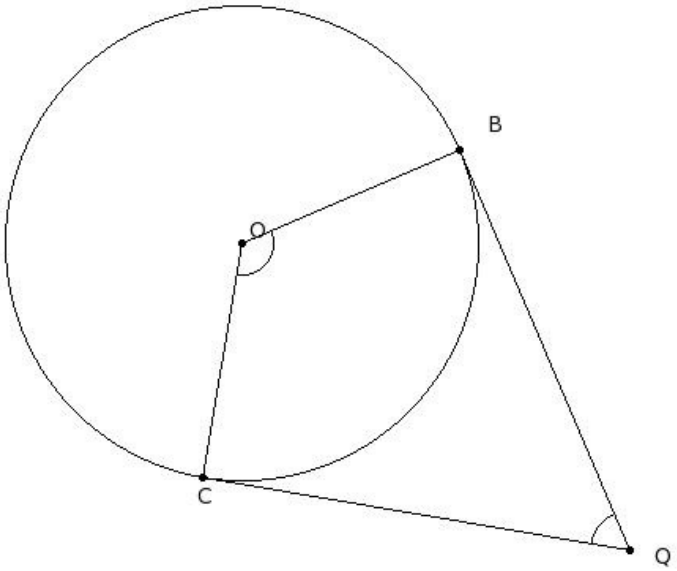
(i) $d=\sqrt{(l^2+r^2)}$ (ii) $r=\sqrt{(l^2+d^2)}$ (iii) $l=\sqrt{(d^2+r^2)}$ (iv) $l=\sqrt{(d^2-r^2)}$ (v) $d=\sqrt{(l^2-r^2)}$

20. In the given figure, O is the centre of the circle and CE is the tangent at D. If ∠BAD = 26°, find ∠BCD + ∠BDC



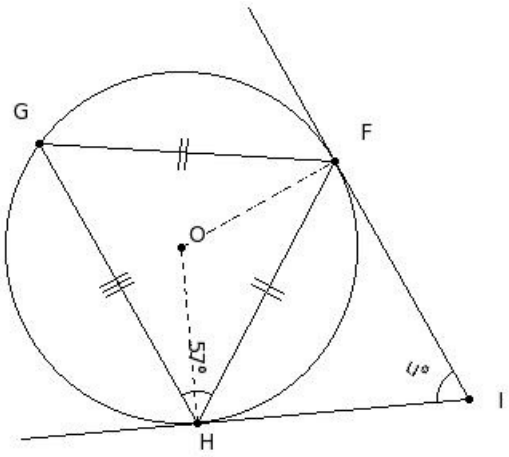
(i) 69° (ii) 79° (iii) 94° (iv) 64° (v) 74°

21. In the given figure, BQ & CQ are tangents to the circle with centre O. Given ∠BQC = 57°, find ∠BOC



(i) 138° (ii) 153° (iii) 133° (iv) 128° (v) 123°

22. In the given figure, O is the centre of the circle and the tangents FI and HI meet at point I. If ∠GHF = 57°, find ∠HIF



(i) 96° (ii) 81° (iii) 76° (iv) 71° (v) 66°

23. A line which intersects the circle at two distinct points is called a

(i) centre (ii) tangent (iii) secant (iv) diameter (v) radius

24. If two circles of radii 9 cm and 7 cm touch internally, the distance between their centres is

(i) 2 cm (ii) 3 cm (iii) 4 cm (iv) 1 cm (v) 0 cm

25. Which of the following statements are true?

a) Diameter of a circle is a part of the semi-circle of the circle.
b) One and only one tangent can be drawn to a circle from a point outside it.
c) One and only one tangent can be drawn to pass through a point on a circle.
d) Every circle has a unique diameter.
e) A secant of a circle is a segment having its end points on the circle.

(i) {e,b,a} (ii) {d,c} (iii) {d,c,a} (iv) {a,c} (v) {b,a}

Assignment Key

1) (iii)	2) (iii)	3) (iii)	4) (i)	5) (v)	6) (ii)
7) (i)	8) (iii)	9) (iii)	10) (ii)	11) (i)	12) (v)
13) (v)	14) (v)	15) (ii)	16) (iii)	17) (i)	18) (i)
19) (i)	20) (iv)	21) (v)	22) (v)	23) (iii)	24) (i)
25) (iv)					