EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Tangent Properties of Circles

Grade : ICSE Grade X

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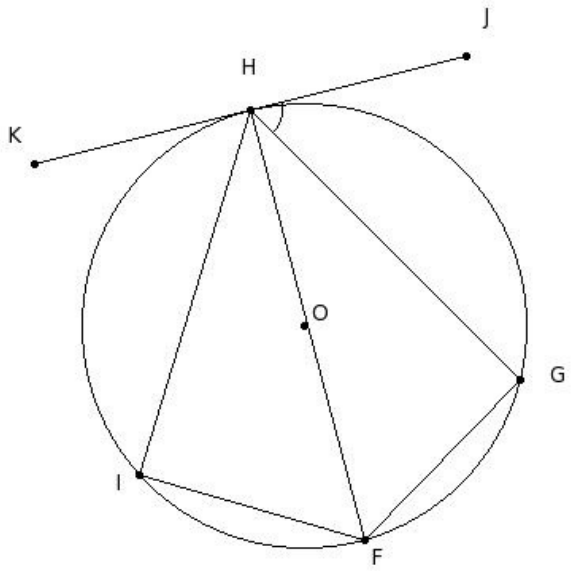
1. Which of the following statements are true?

   a) A diameter is a limiting case of a chord.
   b) A secant has two end points.
   c) A secant and a chord are same.
   d) A tangent is the limiting case of a secant.
   e) A radius is a limiting case of a diameter.

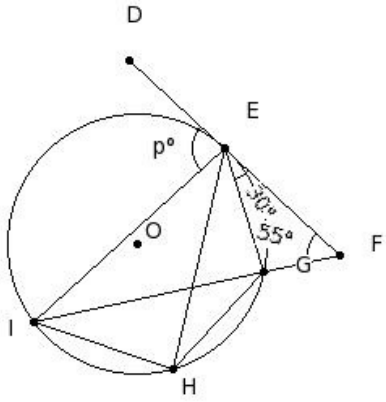
   (i) {c,d,a} (ii) {c,d} (iii) {b,a} (iv) {a,d} (v) {e,b,a}

2. In the given figure, FGHI is a cyclic quadrilateral such that HF bisects ∠IFG and JK is the tangent at H. If ∠HFG = 59°, find ∠JHG



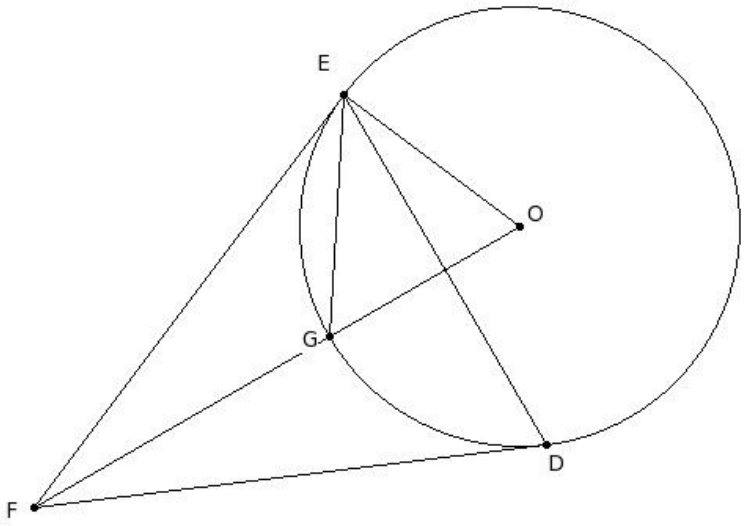
   (i) 59° (ii) 89° (iii) 64° (iv) 74° (v) 69°

3. In the given figure, O is the centre of the circle and DF is the tangent at E. If ∠EFG = 55°,∠FEG = 30°, find ∠IED



   (i) 115° (ii) 85° (iii) 100° (iv) 90° (v) 95°

4. In the given figure, FD and FE are tangent segments to the circle with centre O. Given ∠EFG = 23°, find ∠DEG

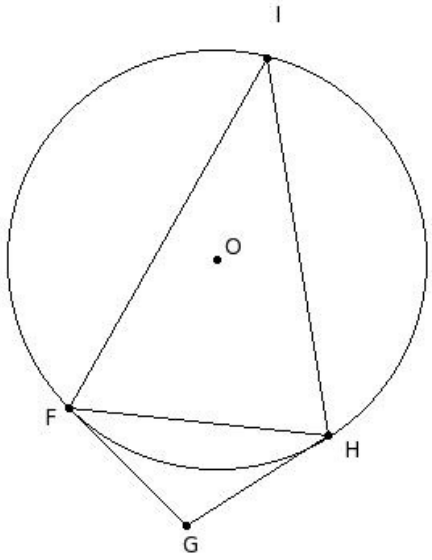


(i) 38.5° (ii) 48.5° (iii) 43.5° (iv) 33.5° (v) 63.5°

5. Two circles are of radii 4 cm and 4 cm. If the distance between their centres is 9 cm, what is the length of their transverse common tangent?

(i) 6.12 cm (ii) 2.12 cm (iii) 3.12 cm (iv) 4.12 cm (v) 5.12 cm

6. O is the centre of the circle. FG and HG are tangents to the circle. If ∠HIF = 38.5°, find ∠FGH



(i) 108° (ii) 118° (iii) 133° (iv) 113° (v) 103°

7. Which of the following statements are true?

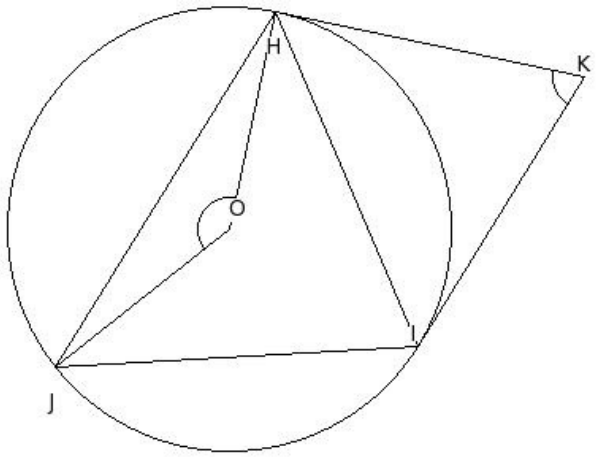
a) A maximum of four common tangents can be drawn touching any two circles.
b) Atmost three common tangents can be drawn touching two circles which touch each other.
c) Atmost two common tangents can be drawn touching any two circles.
d) Atmost one common tangent can be drawn for any two concentric circles.

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

8. If two circles touch externally, the number of their common tangents is

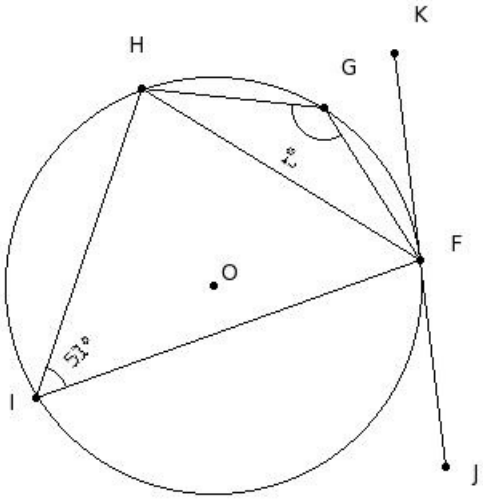
(i) 1 (ii) 2 (iii) 4 (iv) 3 (v) 5

9. O is the centre of the circumcircle of △HIJ. Tangents at H and I intersect at K. If ∠HKI = 70.17° and ∠HOJ = 140°, find ∠JHI



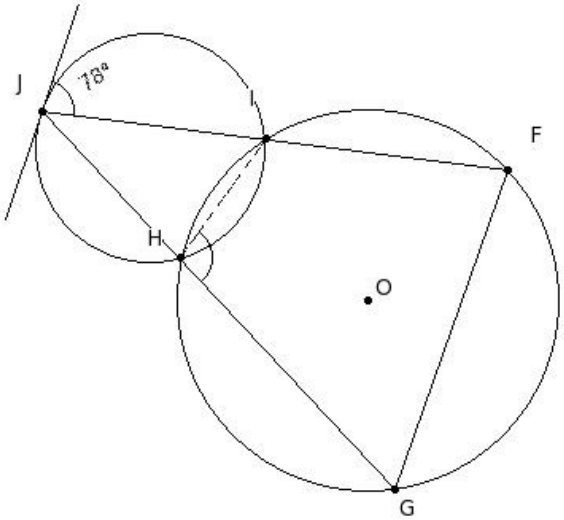
(i) 60.09° (ii) 70.09° (iii) 85.09° (iv) 65.09° (v) 55.09°

10. In the given figure, O is the centre of the circle and JK is the tangent at F. If ∠FIH = 51°, find ∠FGH



(i) 159° (ii) 129° (iii) 139° (iv) 134° (v) 144°

11. 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 = 78°, find ∠GHI

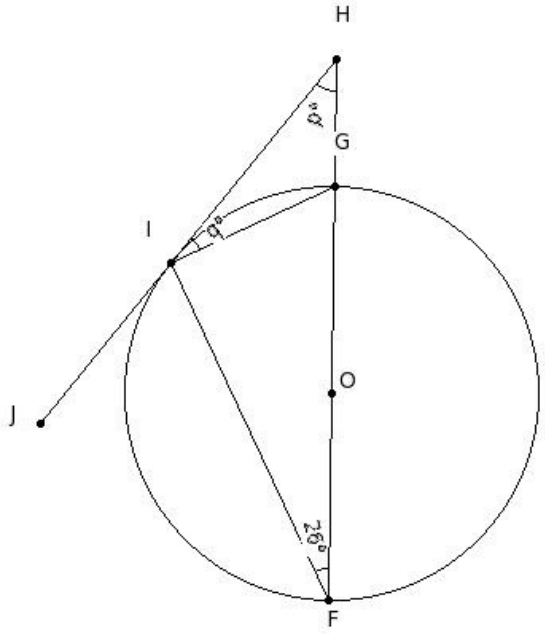


(i) 107° (ii) 112° (iii) 102° (iv) 132° (v) 117°

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

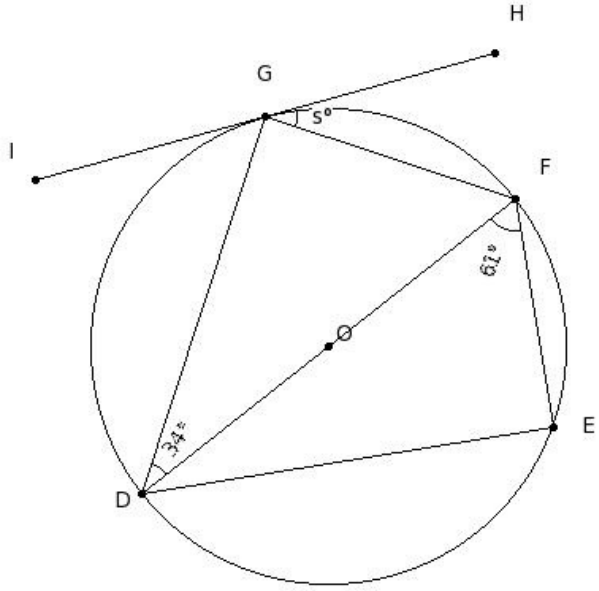
(i) major segment (ii) diameter (iii) secant (iv) radius (v) quadrant

13. In the given figure, O is the centre of the circle and HJ is the tangent at I. If ∠GFI = 26°, find ∠GHI + ∠GIH



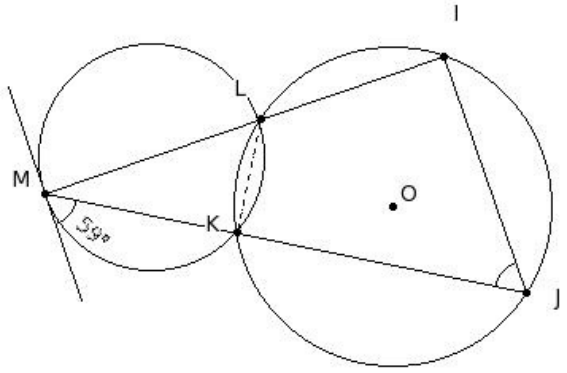
(i) 74° (ii) 64° (iii) 69° (iv) 94° (v) 79°

14. In the given figure, O is the centre of the circle and HI is the tangent at G. If ∠FDG = 34° and ∠DFE = 61°, find ∠HGF



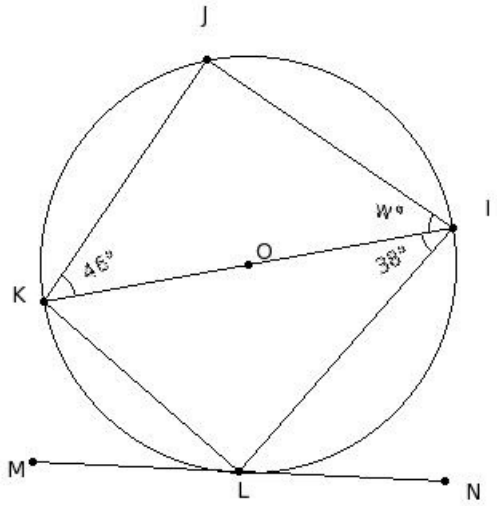
(i) 39° (ii) 44° (iii) 34° (iv) 64° (v) 49°

15. In the given figure, two circles intersect at points K & L. A tangent is drawn at point M. From the same point, two lines are drawn passing through points K & L. They meet the other end of the second circle at J & I. Given ∠M = 59°, find ∠IJK



(i) 89° (ii) 74° (iii) 64° (iv) 69° (v) 59°

16. In the given figure, O is the centre of the circle and MN is the tangent at L. If ∠KIL = 38° and ∠IKJ = 46°, find ∠KIJ



(i) 49° (ii) 44° (iii) 59° (iv) 74° (v) 54°

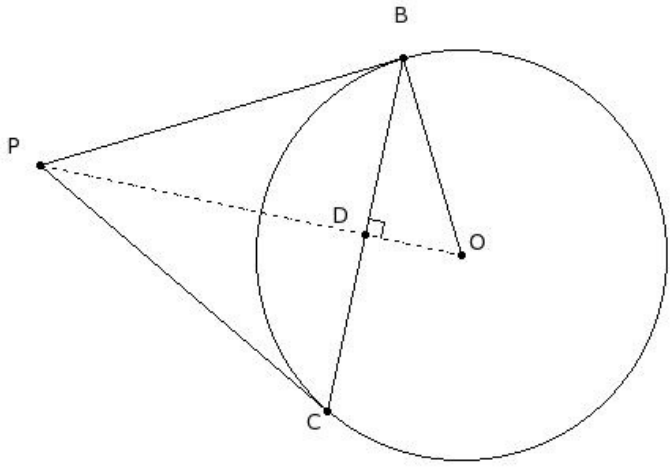
17. Two circles with radii R and r touch internally. If the distance between their centres is d, then

(i) d > R - r (ii) d = R - r (iii) d < R - r (iv) d < R + r (v) d = R + r

18. The distance between the centres of two circles is d.
If the radii are r_1 and r_2, the length of their direct common tangent is

(i) $\sqrt{d^2-(r_1+r_2)^2}$ (ii) $\sqrt{d^2+(r_1-r_2)^2}$ (iii) $\sqrt{d^2+(r_1+r_2)^2}$ (iv) $\sqrt{d^2-(r_1-r_2)^2}$ (v) None of these

19. In the given figure, BP & CP are tangents to the circle with centre O. Given OB = 13 cm and BC = 23 cm, find BP

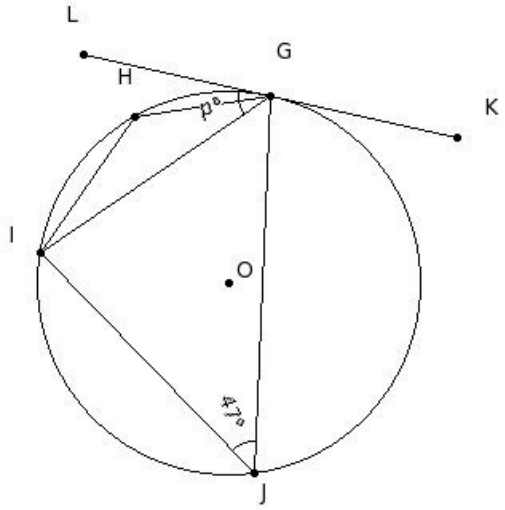


(i) 26.66 cm (ii) 22.66 cm (iii) 24.66 cm (iv) 25.66 cm (v) 23.66 cm

20. 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

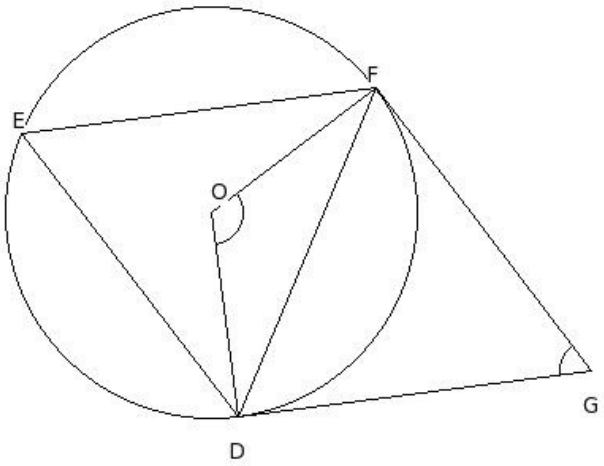
(i) $d=\sqrt{(l^2+r^2)}$ (ii) $l=\sqrt{(d^2+r^2)}$ (iii) $r=\sqrt{(l^2+d^2)}$ (iv) $d=\sqrt{(l^2-r^2)}$ (v) $l=\sqrt{(d^2-r^2)}$

21. In the given figure, O is the centre of the circle and KL is the tangent at G. If ∠GJI = 47°, find ∠LGI



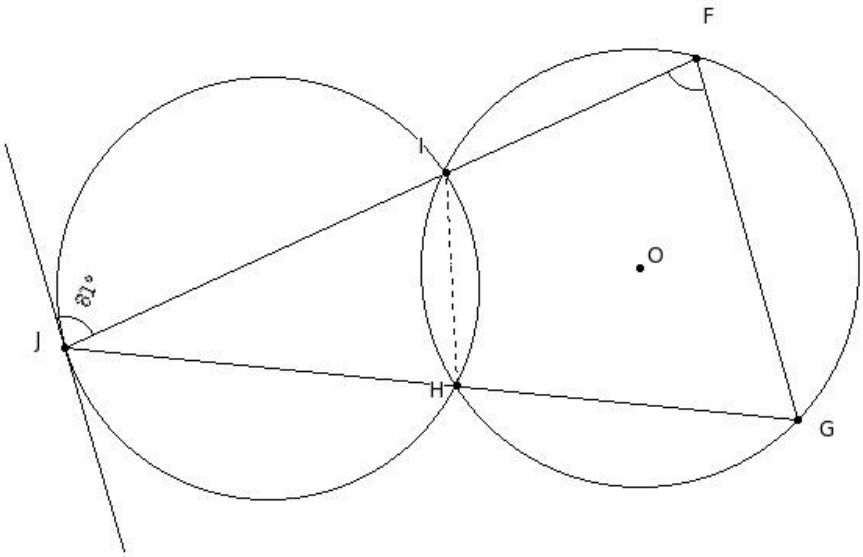
(i) 77° (ii) 52° (iii) 57° (iv) 47° (v) 62°

22. O is the centre of the circumcircle of △DEF. Tangents at D and F intersect at G. If ∠DGF = 60.18°, find ∠FED



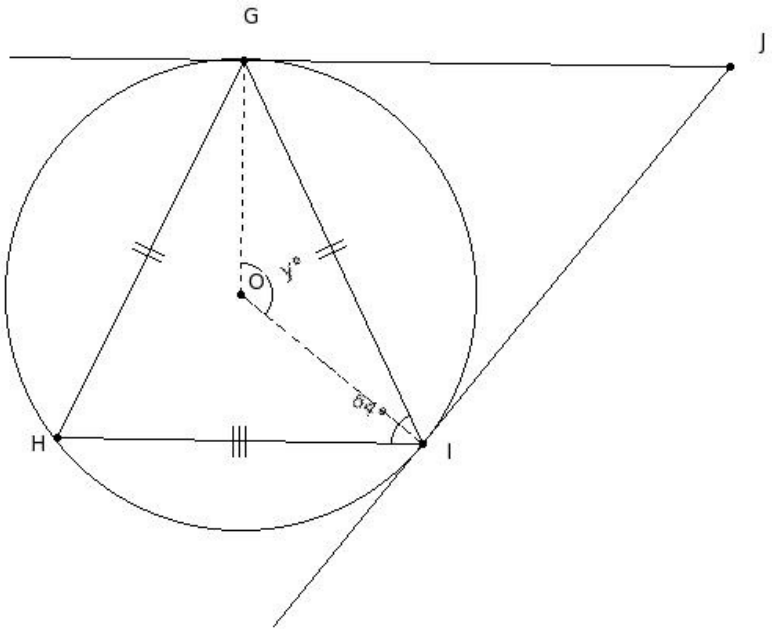
(i) 59.91° (ii) 74.91° (iii) 64.91° (iv) 69.91° (v) 89.91°

23. 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 = 81°, find ∠GFI



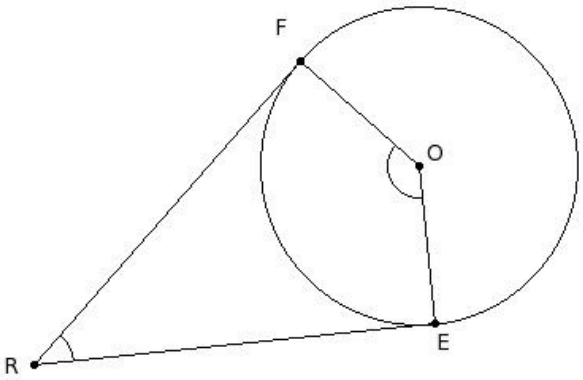
(i) 91° (ii) 86° (iii) 81° (iv) 96° (v) 111°

24. In the given figure, O is the centre of the circle and the tangents GJ and IJ meet at point J. If ∠HIG = 64°, find ∠GOI



(i) 138° (ii) 133° (iii) 143° (iv) 158° (v) 128°

25. In the given figure, ER & FR are tangents to the circle with centre O. Given ∠ERF = 43°, find ∠EOF



(i) 147° (ii) 137° (iii) 167° (iv) 142° (v) 152°

Assignment Key

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

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