



1. Which of the following statements are true?

- a) Each radius of a circle is also a chord of the circle.
- b) Every circle has a unique centre.
- c) Every circle has a unique diameter.
- d) A circle consists of an infinite number of points.
- e) A line can meet a circle at most at two points.

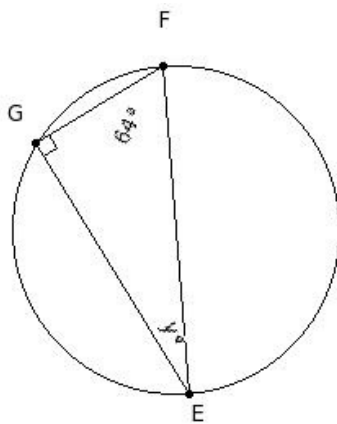
(i) {c,d} (ii) {b,d,e} (iii) {a,c,e} (iv) {a,b,d} (v) {a,b}

2. Which of the following statements are true?

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

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

3. Find the missing angle in the following figure?



(i)  $56^\circ$  (ii)  $31^\circ$  (iii)  $36^\circ$  (iv)  $26^\circ$  (v)  $41^\circ$

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

5. 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)  $d > R - r$

6. The angle between a tangent to a circle and the radius drawn at the point of contact is

(i)  $105^\circ$  (ii)  $90^\circ$  (iii)  $100^\circ$  (iv)  $95^\circ$  (v)  $120^\circ$

7. If two circles of radii 14 cm and 4 cm touch internally, the distance between their centres is

(i) 11 cm (ii) 8 cm (iii) 12 cm (iv) 9 cm (v) 10 cm

8. If two circles of radii 12 cm and 7 cm touch externally, the distance between their centres is

- (i) 18 cm (ii) 20 cm (iii) 17 cm (iv) 21 cm (v) 19 cm

9. If two circles touch internally, the number of their common tangents is

- (i) 2 (ii) 4 (iii) 1 (iv) (-2) (v) 0

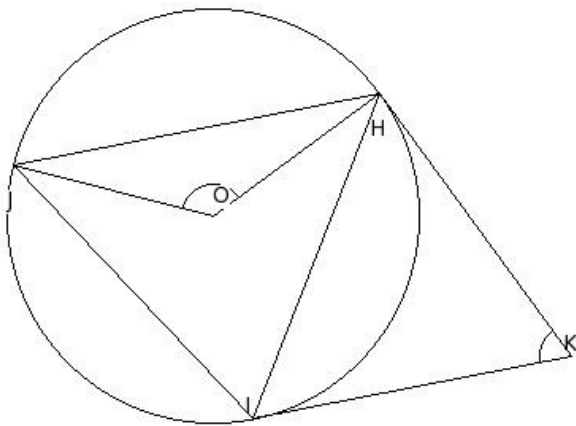
10. If two circles intersect, the number of their common tangents is

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

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

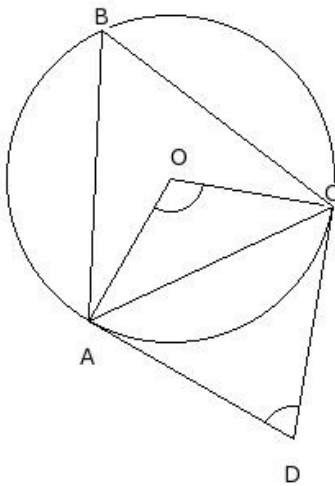
- (i) 1 (ii) 4 (iii) 5 (iv) 2 (v) 3

12. O is the centre of the circumcircle of  $\triangle HIJ$ . Tangents at H and I intersect at K. If  $\angle HKI = 64.72^\circ$  and  $\angle HOJ = 130^\circ$ , find  $\angle JHI$



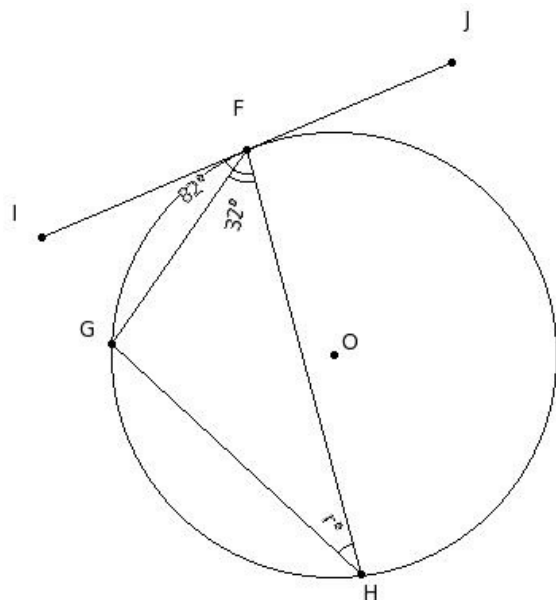
- (i)  $62.36^\circ$  (ii)  $87.36^\circ$  (iii)  $67.36^\circ$  (iv)  $57.36^\circ$  (v)  $72.36^\circ$

13. O is the centre of the circumcircle of  $\triangle ABC$ . Tangents at A and C intersect at D. If  $\angle ADC = 69.65^\circ$ , find  $\angle CBA$



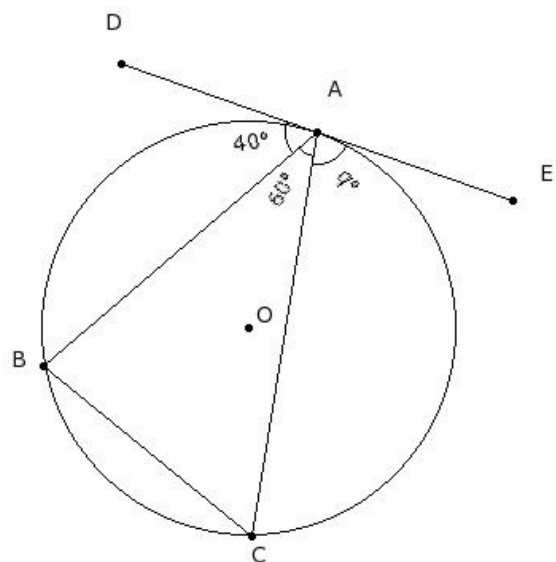
- (i)  $85.17^\circ$  (ii)  $60.17^\circ$  (iii)  $70.17^\circ$  (iv)  $55.17^\circ$  (v)  $65.17^\circ$

14. In the given figure, O is the centre of the circle and IJ is the tangent at F. If  $\angle GFH = 32^\circ$  and  $\angle IFG = 82^\circ$ , find  $\angle FHG$



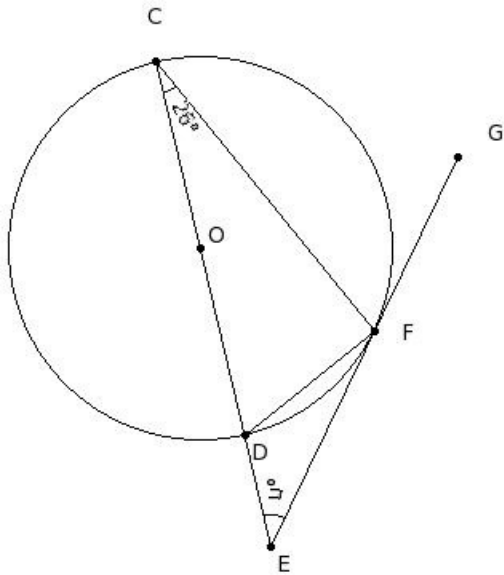
- (i)  $60^\circ$  (ii)  $80^\circ$  (iii)  $50^\circ$  (iv)  $55^\circ$  (v)  $65^\circ$

15. In the given figure, O is the centre of the circle and DE is the tangent at A. If  $\angle BAC = 60^\circ$  and  $\angle DAB = 40^\circ$ , find  $\angle CAE$



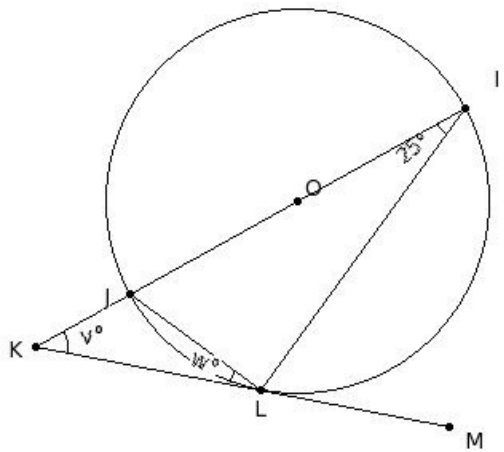
- (i)  $85^\circ$  (ii)  $110^\circ$  (iii)  $80^\circ$  (iv)  $90^\circ$  (v)  $95^\circ$

16. In the given figure, O is the centre of the circle and EG is the tangent at F . If  $\angle DCF = 26^\circ$ , find  $\angle DEF$



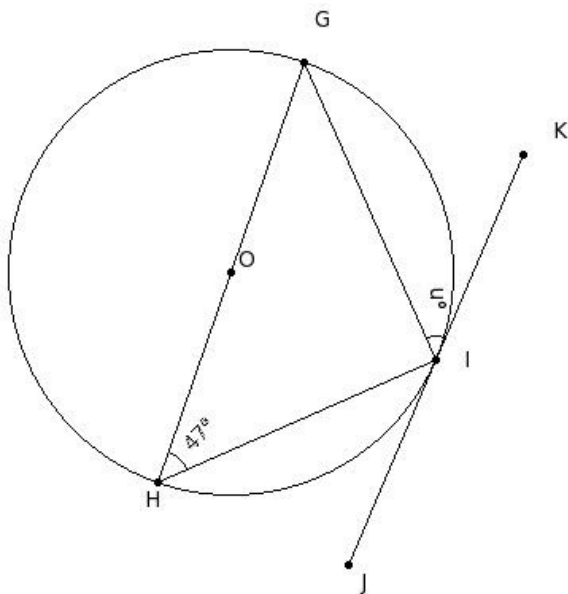
- (i)  $48^\circ$  (ii)  $53^\circ$  (iii)  $38^\circ$  (iv)  $43^\circ$  (v)  $68^\circ$

17. In the given figure, O is the centre of the circle and KM is the tangent at L. If  $\angle JIL = 25^\circ$ , find  $\angle JKL + \angle JLK$



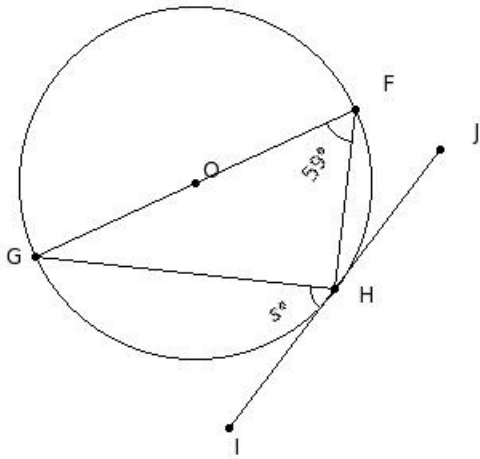
- (i)  $95^\circ$  (ii)  $65^\circ$  (iii)  $80^\circ$  (iv)  $75^\circ$  (v)  $70^\circ$

18. In the given figure, O is the centre of the circle and JK is the tangent at I. If  $\angle IHG = 47^\circ$ , find  $\angle KIG$



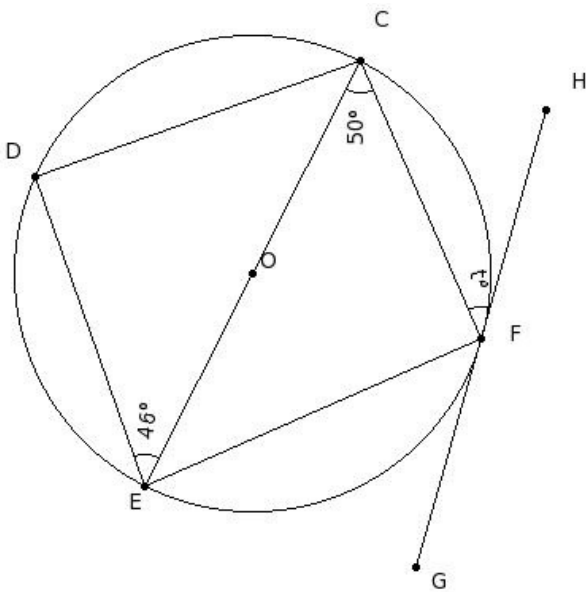
- (i)  $57^\circ$  (ii)  $47^\circ$  (iii)  $77^\circ$  (iv)  $52^\circ$  (v)  $62^\circ$

19. In the given figure, O is the centre of the circle and IJ is the tangent at H. If  $\angle HFG = 59^\circ$ , find  $\angle IHG$



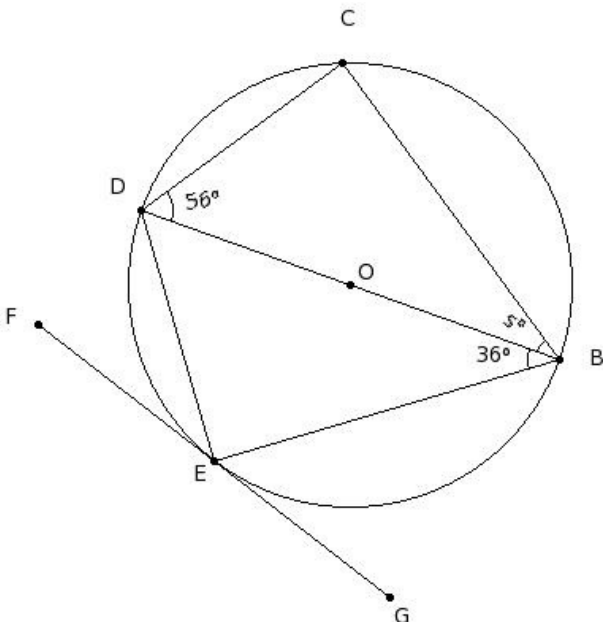
- (i)  $59^\circ$  (ii)  $69^\circ$  (iii)  $64^\circ$  (iv)  $74^\circ$  (v)  $89^\circ$

20. In the given figure, O is the centre of the circle and GH is the tangent at F. If  $\angle ECF = 50^\circ$  and  $\angle CED = 46^\circ$ , find  $\angle HFC$



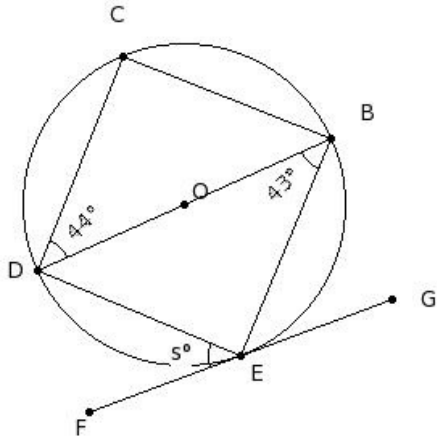
- (i)  $45^\circ$  (ii)  $50^\circ$  (iii)  $70^\circ$  (iv)  $40^\circ$  (v)  $55^\circ$

21. In the given figure, O is the centre of the circle and FG is the tangent at E. If  $\angle DBE = 36^\circ$  and  $\angle BDC = 56^\circ$ , find  $\angle DBC$



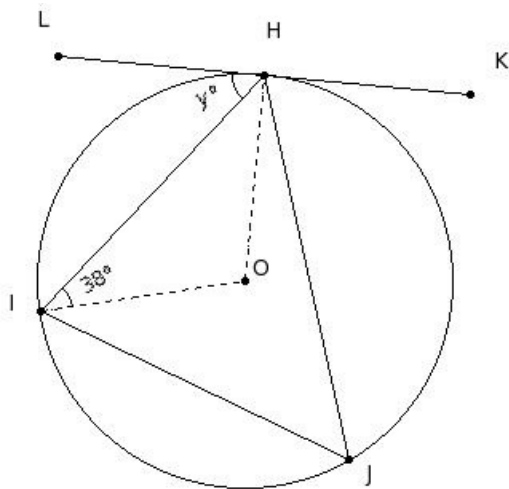
- (i)  $39^\circ$  (ii)  $44^\circ$  (iii)  $64^\circ$  (iv)  $34^\circ$  (v)  $49^\circ$

22. In the given figure, O is the centre of the circle and FG is the tangent at E. If  $\angle DBE = 43^\circ$  and  $\angle BDC = 44^\circ$ , find  $\angle FED$



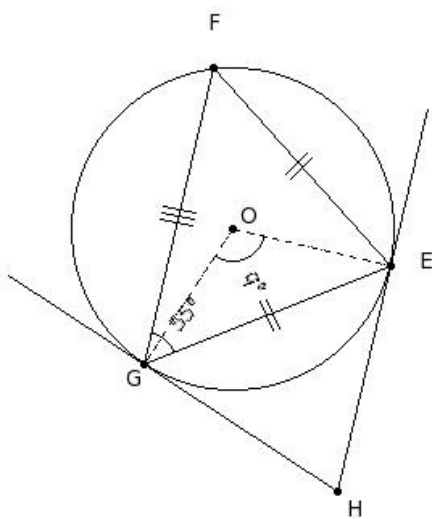
- (i)  $43^\circ$  (ii)  $58^\circ$  (iii)  $48^\circ$  (iv)  $53^\circ$  (v)  $73^\circ$

23. In the given figure, O is the centre of the circle and KL is the tangent at H. If  $\angle OIH = 38^\circ$ , find  $\angle LHI$



- (i)  $62^\circ$  (ii)  $52^\circ$  (iii)  $82^\circ$  (iv)  $67^\circ$  (v)  $57^\circ$

24. In the given figure, O is the centre of the circle and the tangents EH and GH meet at point H. If  $\angle FGE = 55^\circ$ , find  $\angle EOG$



- (i)  $110^\circ$  (ii)  $120^\circ$  (iii)  $125^\circ$  (iv)  $140^\circ$  (v)  $115^\circ$

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

- (i) centre (ii) secant (iii) tangent (iv) major segment (v) semi-circle

26. A line which touches a circle at only one point is called a  
(i) circumference (ii) diameter (iii) quadrant (iv) semi-circle (v) tangent

27. Which of the following statements are true?

- a) Only one circle can be drawn with a centre.
- b) Exactly two tangents can be drawn parallel to a secant.
- c) Infinite circles can be drawn passing through three collinear points.
- d) Only one circle can be drawn passing through two points.
- e) Atmost one circle can be drawn passing through three non-collinear points.

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

28. Which of the following statements are true?

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

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

29. Which of the following statements are true?

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

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

30. Which of the following statements are true?

- a) Atmost one tangent can be drawn through a point inside the circle.
- b) The sides of a triangle can be tangents to a circle.
- c) Only one tangent can be drawn through a point on a circle.
- d) Two tangents to a circle always intersect.
- e) Only two tangents can be drawn from a point outside the circle.

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

31. Which of the following statements are true?

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

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

32. Which of the following statements are true?

- a) If two circles intersect, then two common tangents can be drawn.
- b) If two circles touch each other externally, there is only one common tangent.
- c) There exists four common tangents for any two non-intersecting circles.
- d) If two circles touch each other internally, there is only one common tangent.

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

33. Which of the following statements are true?

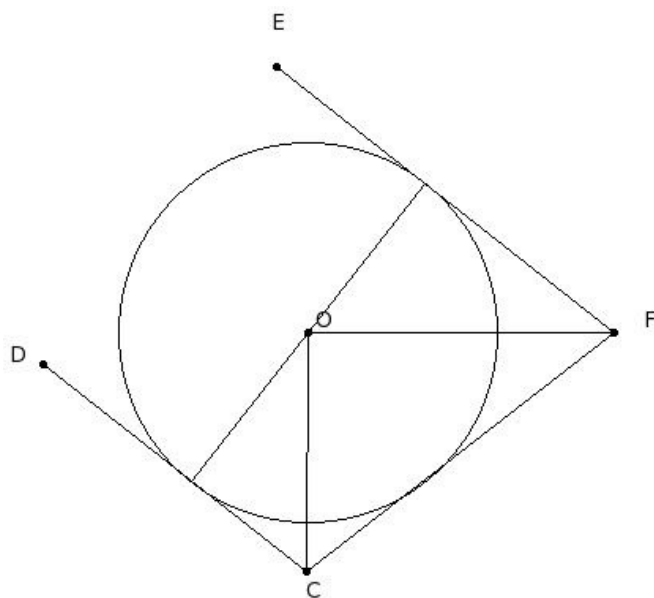
- a) If two circles touch internally, their centres and the point of contact form a scalene triangle.
- b) If two circles touch internally, the square of the distance between their centres is the difference of the squares of their radii.
- c) If two circles touch externally, the distance between their centres is the sum of their radii.
- d) If two circles touch externally, the square of the distance between their centres is the sum of the squares of their radii.
- e) If two circles touch externally, their centres and the point of contact form an isosceles triangle.
- f) If two circles touch internally, the distance between their centres is the difference of their radii.

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

34. With the vertices of a triangle  $\triangle GHI$  as centres, three circles are drawn touching each other externally. If the sides of the triangle are 10 cm , 15 cm and 11 cm , find the radii of the circles

- (i) 8 cm , 12 cm & 13 cm respectively (ii) 8 cm , 7 cm & 8 cm respectively
- (iii) 3 cm , 7 cm & 8 cm respectively (iv) 3 cm , 12 cm & 8 cm respectively
- (v) 3 cm , 7 cm & 13 cm respectively

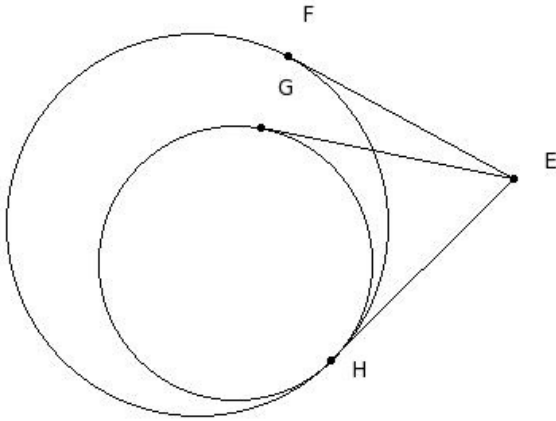
35. In the given figure, CD and EF are parallel tangents to the circle with centre O. CF is another tangent meeting CD and EF at C and F. Find  $\angle COF$



- (i)  $120^\circ$  (ii)  $95^\circ$  (iii)  $105^\circ$  (iv)  $90^\circ$  (v)  $100^\circ$

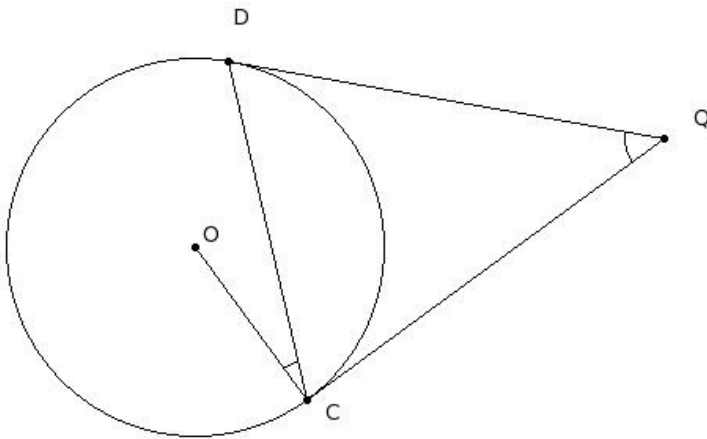


36. In the given figure, EH is the common tangent to the two circles. EF & EG are also tangents. Given  $EF = 16$  cm, find EG



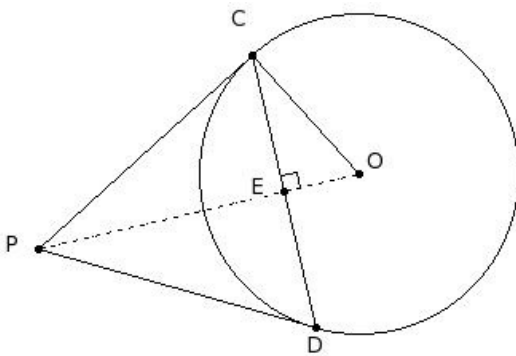
- (i) 17 cm (ii) 15 cm (iii) 18 cm (iv) 14 cm (v) 16 cm

37. In the given figure, CQ & DQ are tangents to the circle with centre O. Given  $\angle Q = 46^\circ$ , find  $\angle C$



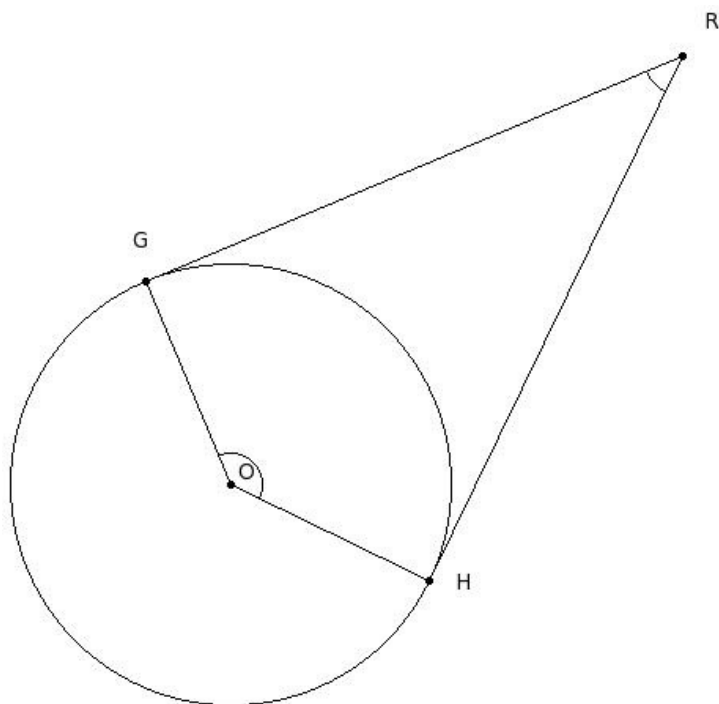
- (i)  $23^\circ$  (ii)  $33^\circ$  (iii)  $38^\circ$  (iv)  $53^\circ$  (v)  $28^\circ$

38. In the given figure, CP & DP are tangents to the circle with centre O. Given  $OC = 10$  cm and  $CD = 18$  cm, find CP



- (i) 21.65 cm (ii) 20.65 cm (iii) 18.65 cm (iv) 19.65 cm (v) 22.65 cm

39. In the given figure, GR & HR are tangents to the circle with centre O. Given  $\angle GRH = 41^\circ$ , find  $\angle GOH$



- (i)  $149^\circ$  (ii)  $139^\circ$  (iii)  $154^\circ$  (iv)  $169^\circ$  (v)  $144^\circ$

40. Two concentric circles are of radii 18 cm and 13 cm. Find the length of the chord of the outer circle that touches the inner circle

- (i) 22.90 cm (ii) 26.90 cm (iii) 25.90 cm (iv) 24.90 cm (v) 23.90 cm

## Assignment Key

1) (ii)	2) (iii)	3) (iv)	4) (iv)	5) (i)	6) (ii)
7) (v)	8) (v)	9) (iii)	10) (ii)	11) (v)	12) (iv)
13) (iv)	14) (iii)	15) (iii)	16) (iii)	17) (ii)	18) (ii)
19) (i)	20) (iv)	21) (iv)	22) (i)	23) (ii)	24) (i)
25) (ii)	26) (v)	27) (i)	28) (ii)	29) (iv)	30) (iii)
31) (ii)	32) (ii)	33) (iv)	34) (iii)	35) (iv)	36) (v)
37) (i)	38) (ii)	39) (ii)	40) (iv)		