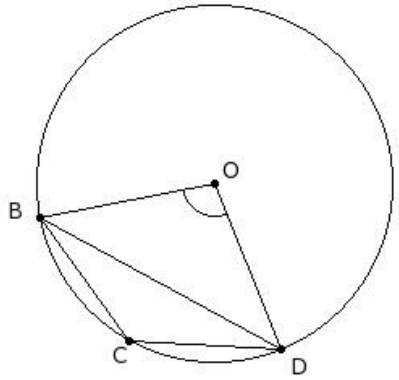
EduSahara™ Assignment

Name : Angle Properties of Circles

Chapter : Circles

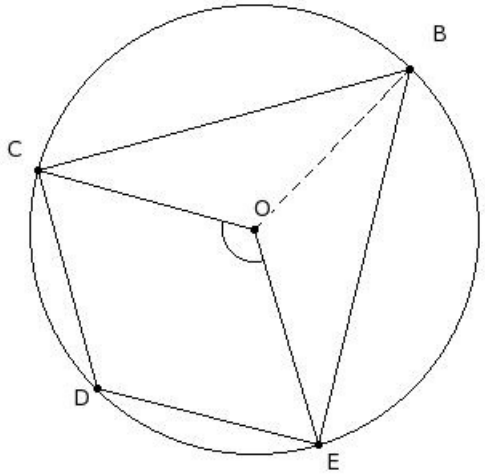
Grade : CBSE Grade IX

1. O is the centre of the circle. If $\angle O = 101°$, find $\angle C$



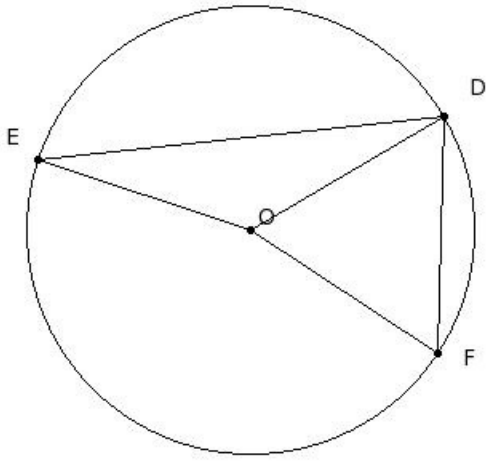
(i) 144.5° (ii) 159.5° (iii) 129.5° (iv) 134.5° (v) 139.5°

2. O is the centre of the circle. If $\angle COE = 122°$, find $\angle B$



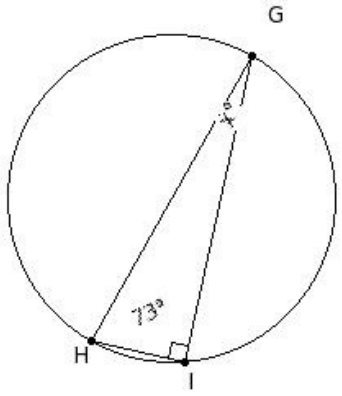
(i) 76° (ii) 61° (iii) 91° (iv) 66° (v) 71°

3. O is the centre of the circle. If $\angle EOD = 131°$ and $\angle FOD = 64°$, find $\angle EDF$



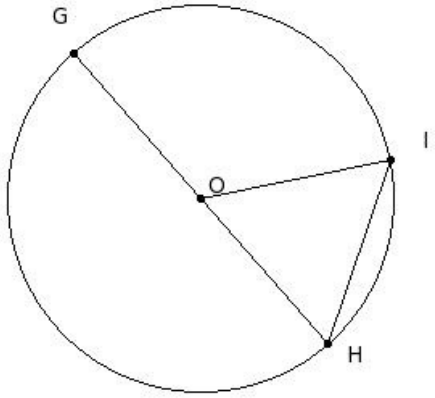
(i) 97.5° (ii) 82.5° (iii) 112.5° (iv) 87.5° (v) 92.5°

4. Find the missing angle in the following figure?



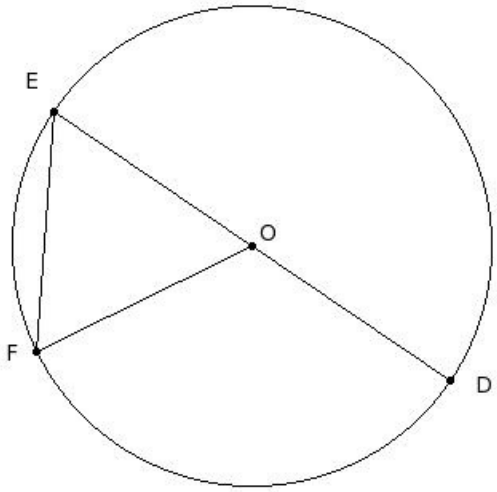
(i) 17° (ii) 22° (iii) 27° (iv) 32° (v) 47°

5. O is the centre of the circle and OI = HI. Find ∠HOI



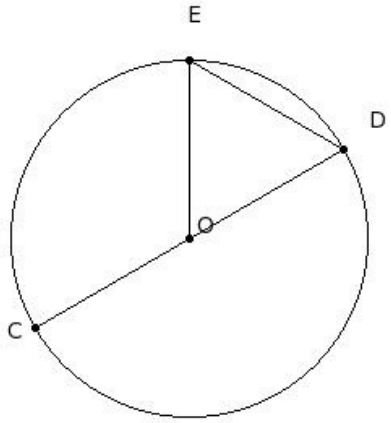
(i) 90° (ii) 65° (iii) 70° (iv) 75° (v) 60°

6. O is the centre of the circle and OF = EF. Find ∠FOD



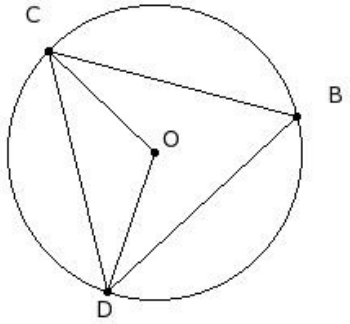
(i) 125° (ii) 135° (iii) 150° (iv) 130° (v) 120°

7. O is the centre of the circle and OE = DE. Find reflex ∠EOC



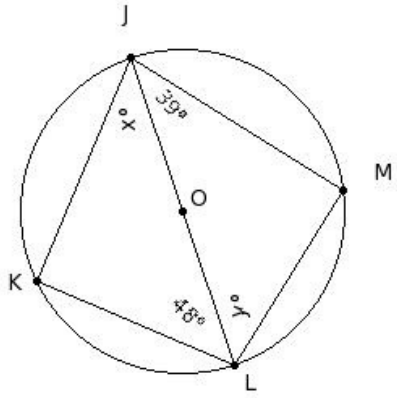
(i) 245° (ii) 270° (iii) 255° (iv) 250° (v) 240°

8. O is the centre of the circle. If $\angle B + \angle COD = 172.5°$, find $\angle COD$



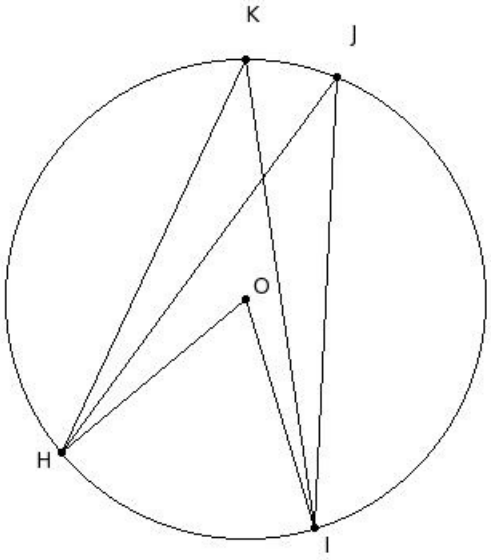
(i) 145° (ii) 125° (iii) 130° (iv) 115° (v) 120°

9. O is the centre of the circle. If ∠JLK = 48° and ∠LJM = 39°, find x°, y°



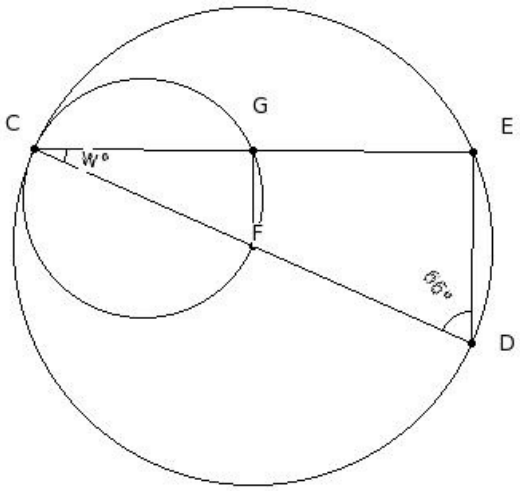
(i) 42°, 51° (ii) 41°, 42° (iii) 51°, 42° (iv) 81°, 62° (v) 61°, 52°

10. O is the centre of the circle. If ∠HOI = 67°, find the angle ∠J



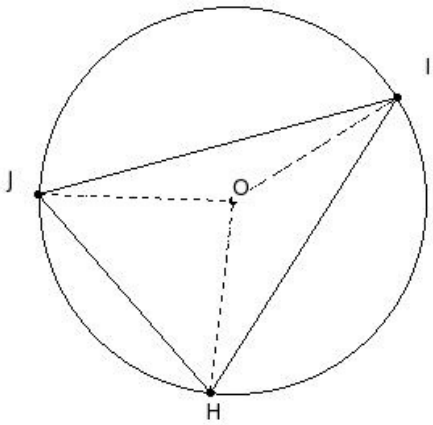
(i) 48.5° (ii) 33.5° (iii) 38.5° (iv) 43.5° (v) 63.5°

11. Two circles touch internally. F is the centre of the bigger circle and lies on the smaller circle. If ∠CDE = 66°, find ∠C



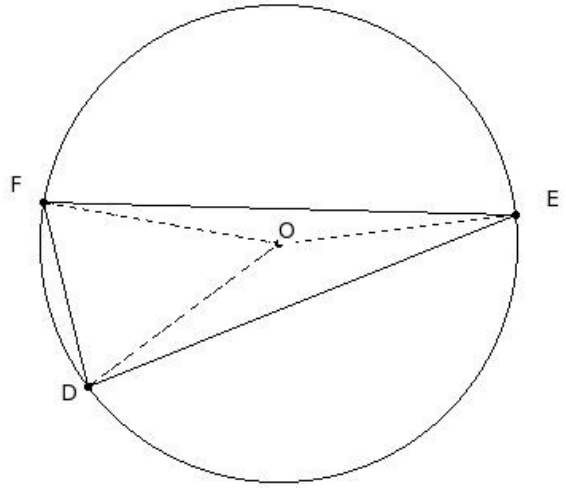
(i) 34° (ii) 39° (iii) 54° (iv) 29° (v) 24°

12. △HIJ is inscribed in a circle with centre O. If ∠HOI = 129° and ∠IOJ = 146°, find ∠JHI



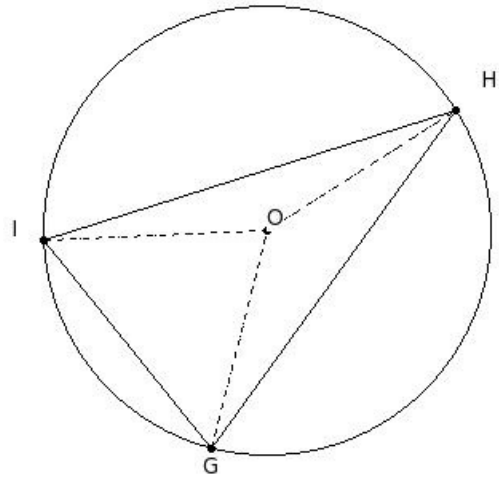
(i) 88° (ii) 78° (iii) 103° (iv) 73° (v) 83°

13. △DEF is inscribed in a circle with centre O. If ∠DOE = 150° and ∠EOF = 163°, find ∠DEF



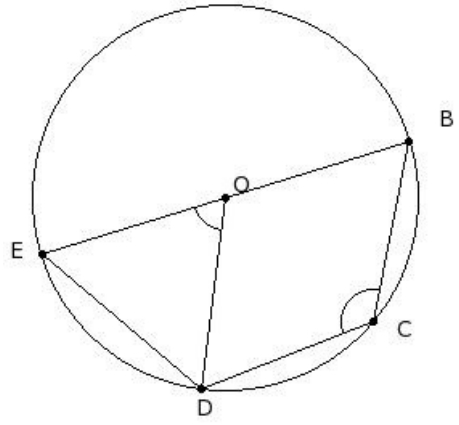
(i) 28.5° (ii) 23.5° (iii) 38.5° (iv) 53.5° (v) 33.5°

14. △GHI is inscribed in a circle with centre O. If ∠GOH = 137° and ∠HOI = 150°, find ∠HIG



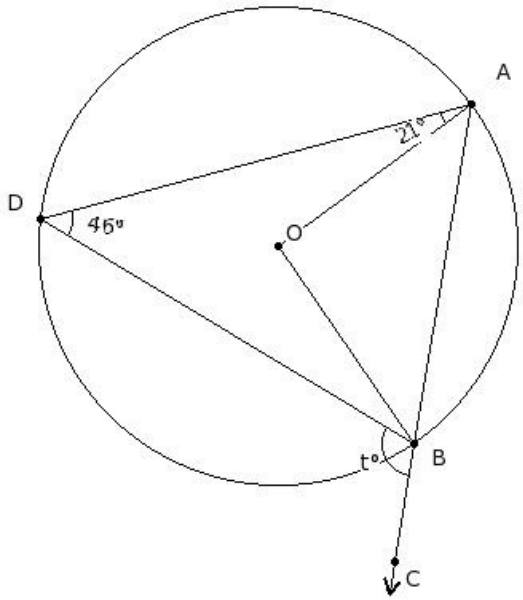
(i) 83.5° (ii) 68.5° (iii) 98.5° (iv) 78.5° (v) 73.5°

15. O is the centre of the circle. If ∠BCD = 123°, find ∠DOE



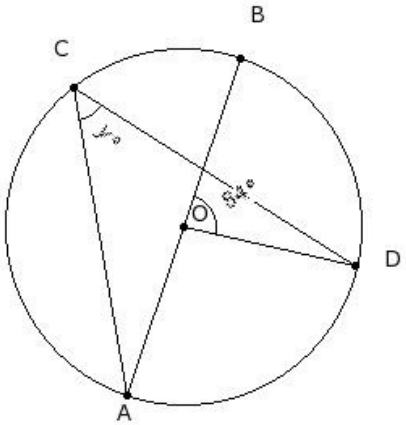
(i) 76° (ii) 81° (iii) 96° (iv) 66° (v) 71°

16. In the given figure, O is the centre of the circle. If ∠ADB = 46° and ∠OAD = 21°, find ∠CBD



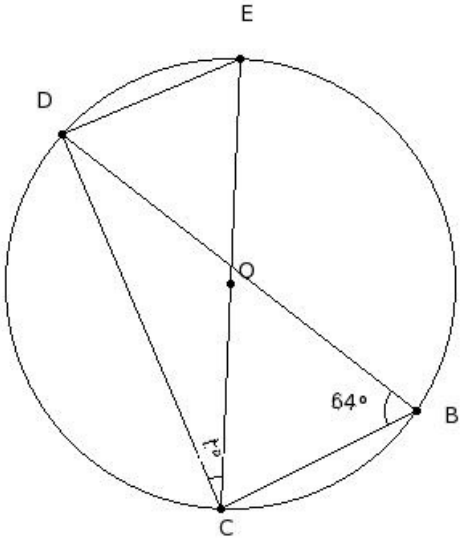
(i) 111° (ii) 126° (iii) 141° (iv) 116° (v) 121°

17. In the given figure, O is the centre of the circle and AB is a diameter. If ∠BOD = 84°, find ∠ACD



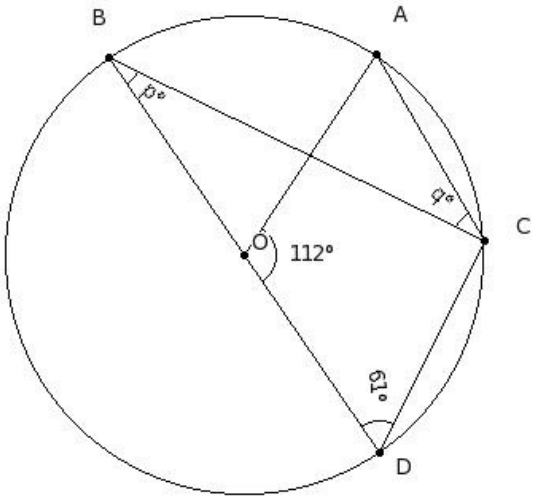
(i) 58° (ii) 63° (iii) 78° (iv) 48° (v) 53°

18. In the given figure, O is the centre of the circle and CE is a diameter. If ∠DBC = 64°, find ∠DCE



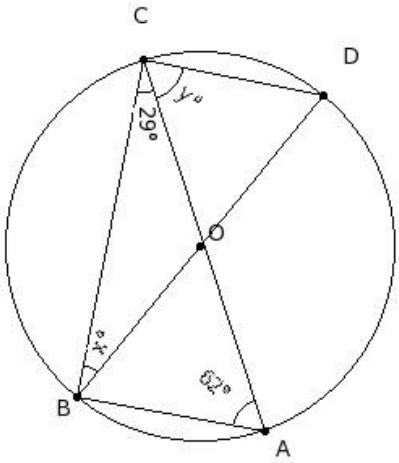
(i) 31° (ii) 56° (iii) 36° (iv) 41° (v) 26°

19. In the given figure, O is the centre of the circle and BD is a diameter. If ∠AOD = 112° and ∠ODC = 61°, find ∠BCA + ∠CBD



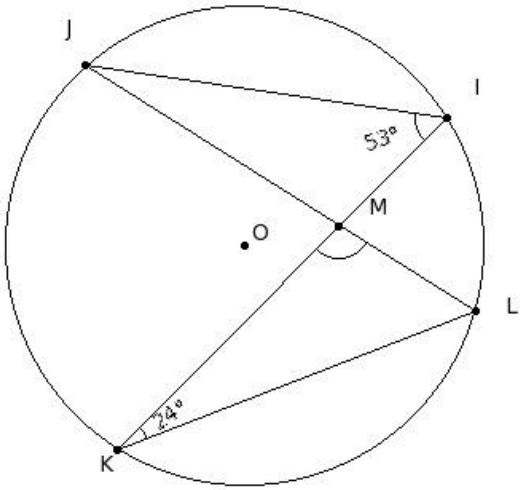
(i) 93° (ii) 73° (iii) 63° (iv) 68° (v) 78°

20. In the given figure, O is the centre of the circle and BD is a diameter. If ∠ACB = 29° and ∠BAC = 62°, find ∠DBC + ∠ACD



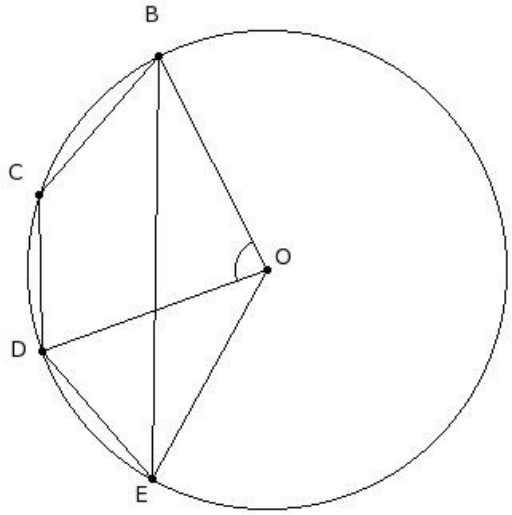
(i) 99° (ii) 89° (iii) 104° (iv) 94° (v) 119°

21. In the given figure, O is the centre of the circle. If ∠JIK = 53° and ∠IKL = 24°, find ∠KML



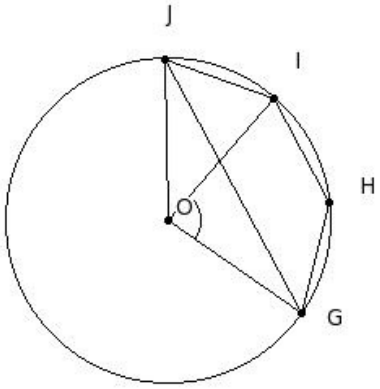
(i) 133° (ii) 113° (iii) 103° (iv) 108° (v) 118°

22. O is the centre of the circle. If Arc BD = 2 Arc DE and ∠BOD = 83°, find ∠BED



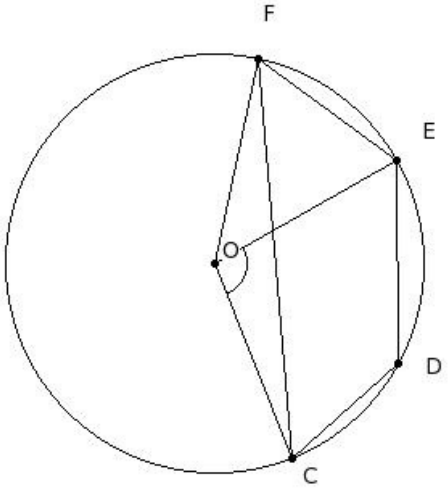
(i) 51.5° (ii) 56.5° (iii) 46.5° (iv) 71.5° (v) 41.5°

23. O is the centre of the circle. If Arc GI = 2 Arc IJ and ∠GOI = 84°, find ∠JGI



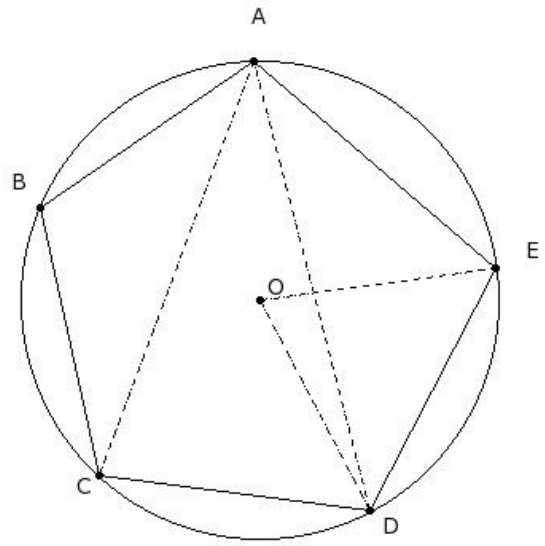
(i) 51° (ii) 36° (iii) 21° (iv) 26° (v) 31°

24. O is the centre of the circle. If Arc CE = 2 Arc EF and ∠COE = 98°, find ∠CDE



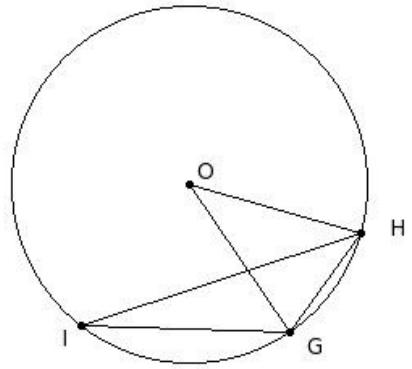
(i) 131° (ii) 136° (iii) 141° (iv) 161° (v) 146°

25. In the given figure, a pentagon is inscribed in a circle with centre O. Given BC = CD = DE and ∠BCD = 110°. Find ∠DOE



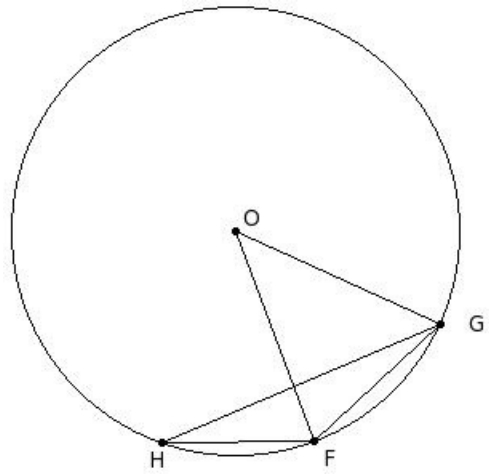
(i) 80° (ii) 70° (iii) 85° (iv) 75° (v) 100°

26. In the given figure, GH is a side of regular 5-sided polygon and GI is a side of regular 9-sided polygon inscribed in a circle with centre O. Find ∠GOH



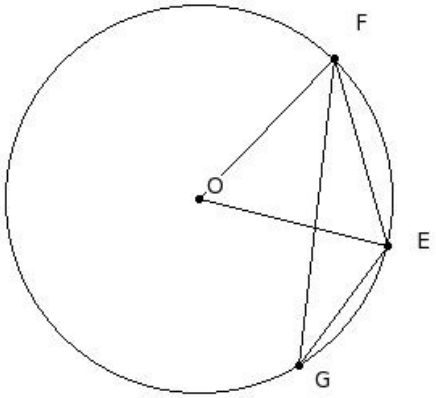
(i) 87° (ii) 72° (iii) 102° (iv) 77° (v) 82°

27. In the given figure, FG is a side of regular 9-sided polygon and FH is a side of regular 8-sided polygon inscribed in a circle with centre O. Find ∠FHG



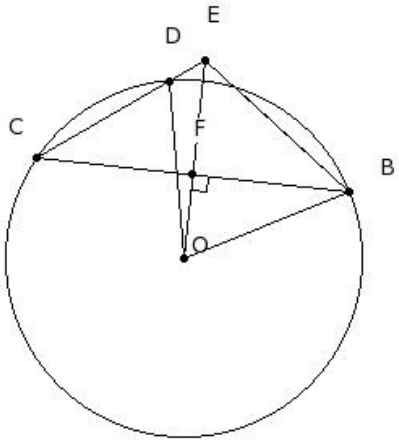
(i) 20° (ii) 50° (iii) 30° (iv) 35° (v) 25°

28. In the given figure, EF is a side of regular 8-sided polygon and EG is a side of regular 6-sided polygon inscribed in a circle with centre O. Find ∠EFG



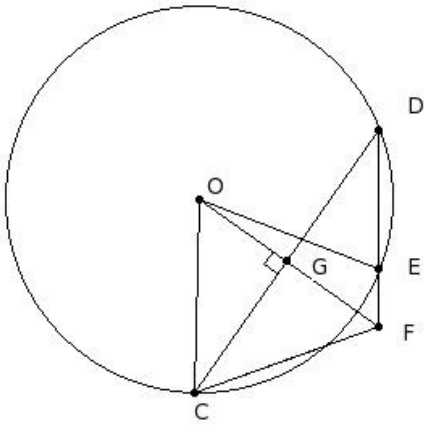
(i) 30° (ii) 40° (iii) 35° (iv) 45° (v) 60°

29. In the given figure, O is the centre of the circle, and OF ⊥ BC. If ∠BCD = 36.5°, find ∠BOD



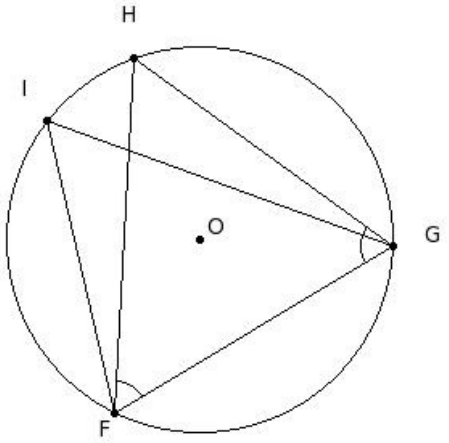
(i) 73° (ii) 103° (iii) 83° (iv) 88° (v) 78°

30. In the given figure, O is the centre of the circle, and OG ⊥ CD. If ∠CDE = 35°, find ∠OFE



(i) 70° (ii) 85° (iii) 55° (iv) 60° (v) 65°

31. In the given figure, O is the centre of the circle. If ∠HFG = 55.88° and ∠FGH = 67.02°, find the angle ∠FIG



(i) 67.1° (ii) 57.1° (iii) 62.1° (iv) 87.1° (v) 72.1°

32. Which of the following statements are true?

a) The longest chord of the circle passes through the centre of the circle.
b) Equal length chords subtend equal angles at the centre of the circle.
c) No two chords bisects each other.
d) The farther the chord is from the centre, the larger the angle it subtends at the centre.
e) Equal length chords are equidistant from the centre of the circle.

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

33. Which of the following statements are true?

a) Angles subtended by equal length arcs in two circles are equal.
b) Angles in the same segment are equal.
c) Angles in the opposite segments are complementary.
d) Angles in the opposite segments are supplementary.

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

34. The point of intersection of the angular bisectors of a triangle is

(i) circumcentre (ii) incentre (iii) centroid (iv) orthocentre (v) excentre

35. If an arc subtends an angle of x° in its alternate segment, then the angle is subtends at the centre is

(i) 4x° (ii) 2x° (iii) x° (iv) $\frac{x°}{2}$

36. An arc subtends 90° in its alternate segment. The arc is

(i) major segment (ii) major arc (iii) quadrant (iv) minor arc (v) semi-circle

37. An arc subtends 150° in its alternate segment. The arc is

(i) major arc (ii) quadrant (iii) minor segment (iv) semi-circle (v) minor arc

38. An arc subtends 39° in its alternate segment. The arc is

(i) quadrant (ii) major arc (iii) minor arc (iv) major segment (v) semi-circle

39. An arc subtends 76° in its alternate segment. Its corresponding major arc subtends what angle in its (major arc) alternate segment?

(i) 109° (ii) 104° (iii) 119° (iv) 114° (v) 134°

40. An arc subtends 64° in its alternate segment. The angle made by its corresponding major arc at the centre is

(i) 247° (ii) 232° (iii) 242° (iv) 237° (v) 262°

41. The angle subtended by the semicircle at the centre is

(i) 210° (ii) 195° (iii) 190° (iv) 180° (v) 185°

42. The angle subtended by the diameter at any point on the circle is

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

43. Angle subtended by the major arc at the centre is

(i) straight angle (ii) complete angle (iii) reflex angle (iv) zero angle (v) right angle

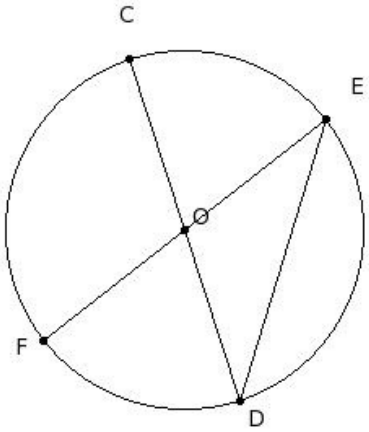
44. Angle subtended in the major segment is

(i) straight angle (ii) obtuse angle (iii) complete angle (iv) acute angle (v) right angle

45. If the radius of the circumcircle is half the length of a side of the triangle, then the triangle is

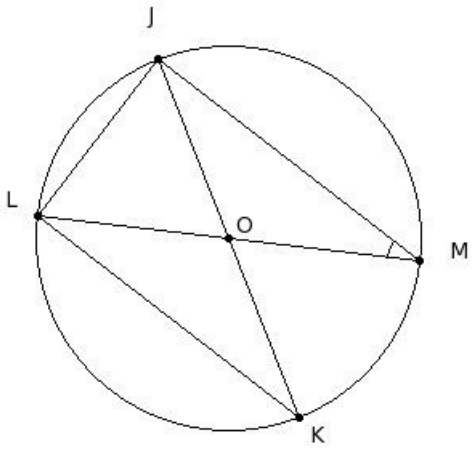
(i) obtuse angled triangle (ii) equilateral triangle (iii) right angle triangle (iv) acute angled triangle

46. In the given figure, CD & EF are diameters of the circle. If ∠CDE = 35° find, ∠DOE



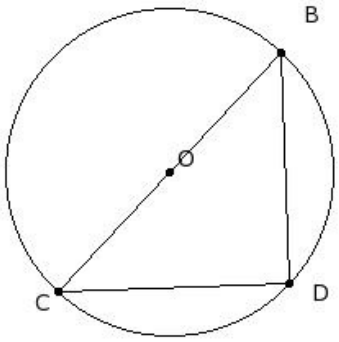
(i) 110° (ii) 120° (iii) 125° (iv) 140° (v) 115°

47. In the given figure, JK & LM are diameters of the circle. If ∠JML = 31°, find ∠OLK



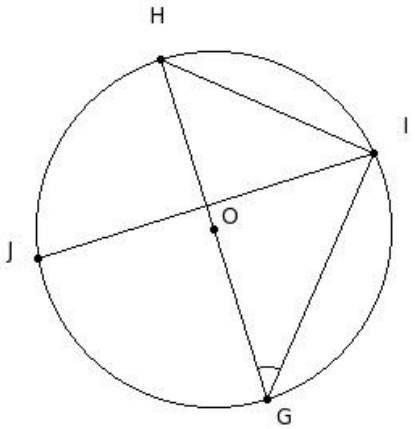
(i) 41° (ii) 36° (iii) 46° (iv) 61° (v) 31°

48. In the given figure BD & CD are equal length chords of the circle. Find ∠DBC



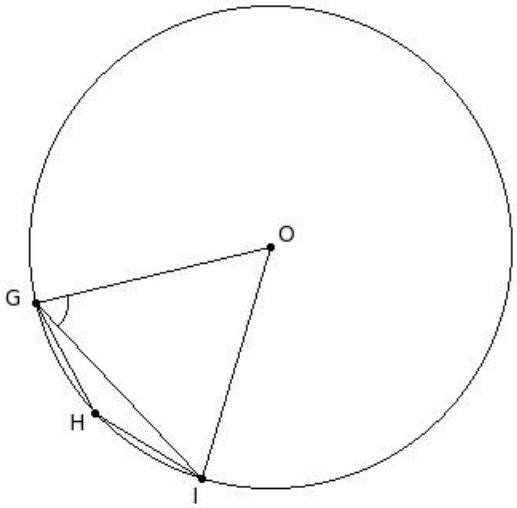
(i) 75° (ii) 55° (iii) 45° (iv) 60° (v) 50°

49. In the given figure, GH is a diameter of the circle with centre O. If ∠HGI = 40.92° and HI = HJ, find ∠JIG



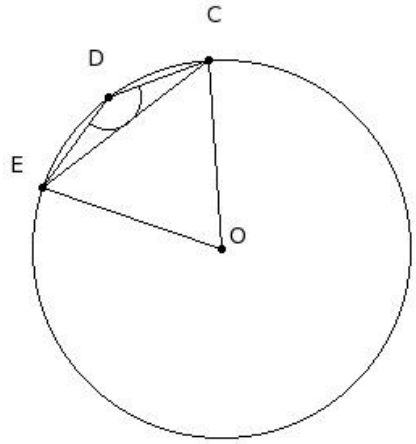
(i) 64.08° (ii) 54.08° (iii) 79.08° (iv) 59.08° (v) 49.08°

50. In the given figure, O is the centre of the circle. If ∠OGI = 60°, find ∠H



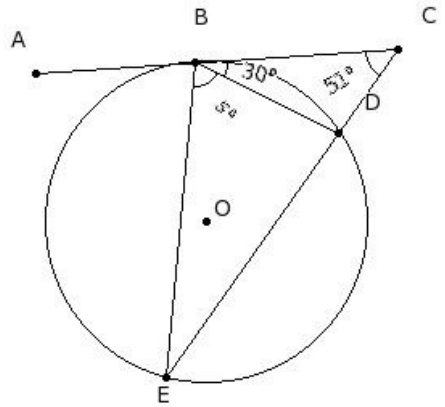
(i) 150° (ii) 160° (iii) 165° (iv) 180° (v) 155°

51. In the given figure, O is the centre of the circle. If ∠CDE = 147°, find ∠OCE



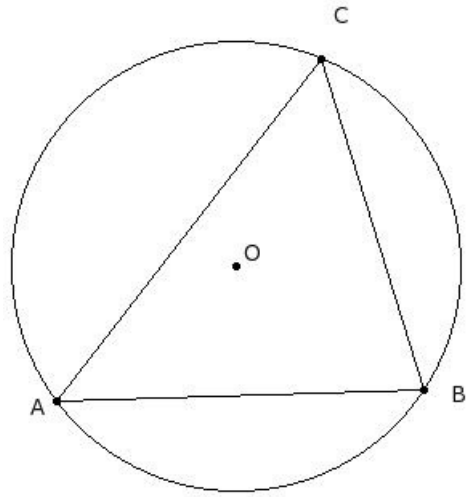
(i) 62° (ii) 57° (iii) 67° (iv) 87° (v) 72°

52. In the given figure, O is the centre of the circle and AC is the tangent at B. If ∠BCD = 51°,∠CBD = 30°, find ∠EBD



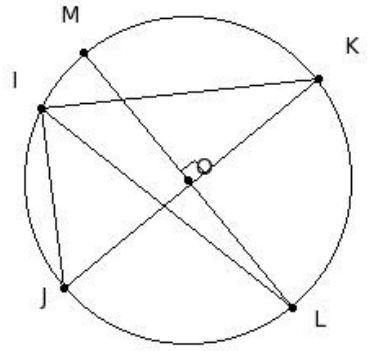
(i) 79° (ii) 74° (iii) 84° (iv) 69° (v) 99°

53. O is the centre of the circle. If ∠BCA = 55°, find the angle ∠OBA



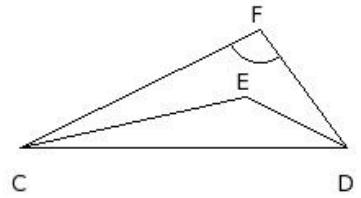
(i) 40° (ii) 65° (iii) 45° (iv) 35° (v) 50°

54. LM is the perpendicular bisector of side JK of △IJK. Given ∠IJK = 58° and ∠LIK = 44° , find ∠IKJ



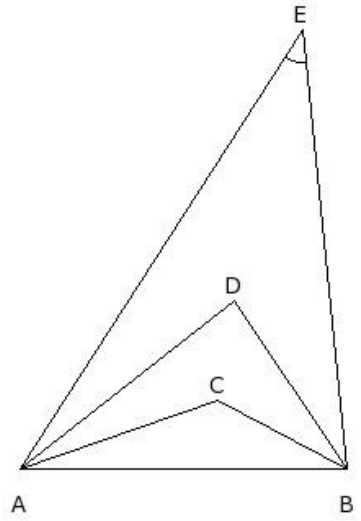
(i) 49° (ii) 34° (iii) 44° (iv) 39° (v) 64°

55. In the given figure, △FCD is a scalene triangle. EC bisects ∠FCD. Similarly DE bisects ∠CDF. Given ∠DFC = 100°, find ∠DEC



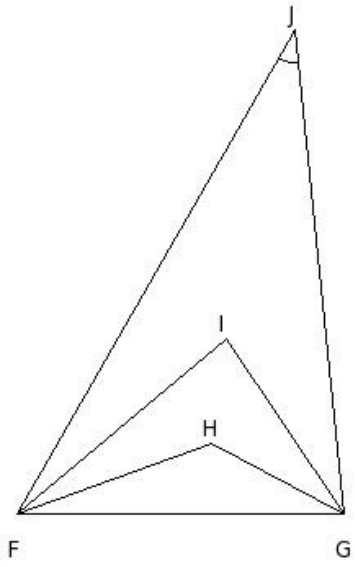
(i) 155° (ii) 150° (iii) 145° (iv) 140° (v) 170°

56. In the given figure, △EAB is a scalene triangle. CA & DA trisect ∠EAB. Similarly BC & BD trisect ∠ABE. Given ∠BEA = 39°, find ∠BCA



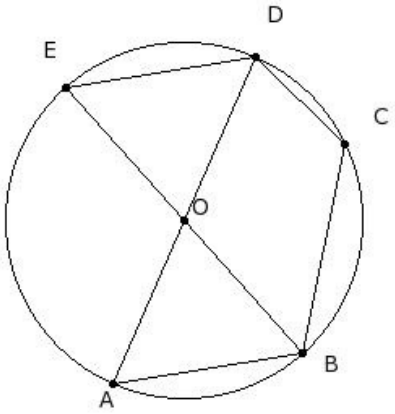
(i) 148° (ii) 138° (iii) 133° (iv) 143° (v) 163°

57. In the given figure, △JFG is a scalene triangle. HF & IF trisect ∠JFG. Similarly GH & GI trisect ∠FGJ. Given ∠GJF = 36°, find ∠GIF



(i) 84° (ii) 89° (iii) 94° (iv) 99° (v) 114°

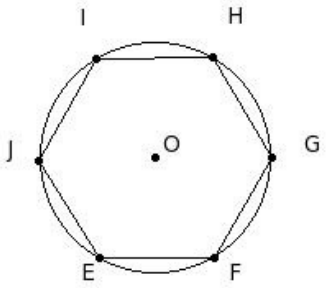
58. In the given figure, AB , BC , CD and DE are chords and AD , BE are diameters passing through the centre O. If ∠AOB = 65°. Find ∠BCD



(i) 127.5° (ii) 122.5° (iii) 132.5° (iv) 152.5° (v) 137.5°

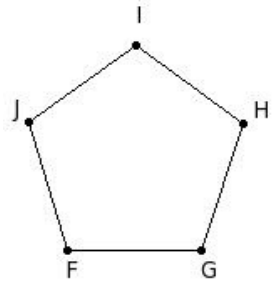
59. In the given figure, EFGHIJ is a regular hexagon inscribed in a circle with centre O. Which of the following are true?

a) ∠EOJ = 60°
b) ∠EGF = 60°
c) ∠FIG = 30°
d) ∠JHG = 90°
e) ∠FOH = 120°



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

60. In the given figure, FGHIJ is a regular pentagon . Find ∠FJH



(i) 77° (ii) 87° (iii) 82° (iv) 72° (v) 102°

61. Which of the following statements are true?

a) Angle subtended by the major arc in its alternate segment is obtuse.
b) Angle subtended in the major segment is obtuse.
c) If two chords are equal, then they are equidistant from the centre of the circle.
d) Angle subtended by the major arc at the centre is acute.
e) The angle subtended in a semicircle is a right angle.

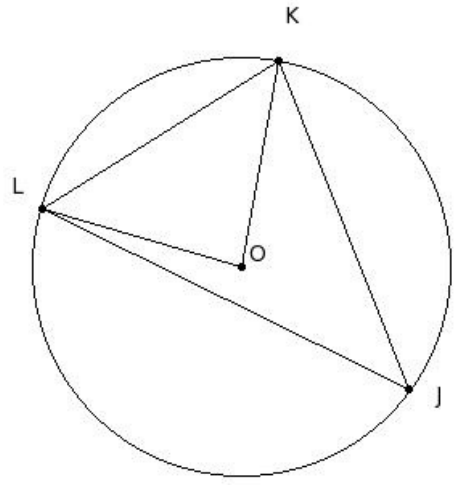
(i) {b,a} (ii) {b,d,e} (iii) {d,c} (iv) {b,a,c} (v) {a,c,e}

62. In triangle HIJ, if a circle is drawn with IJ as diameter and if it passes through H it is a

(i) right angle triangle (ii) equilateral triangle (iii) acute angled triangle (iv) obtuse angled triangle

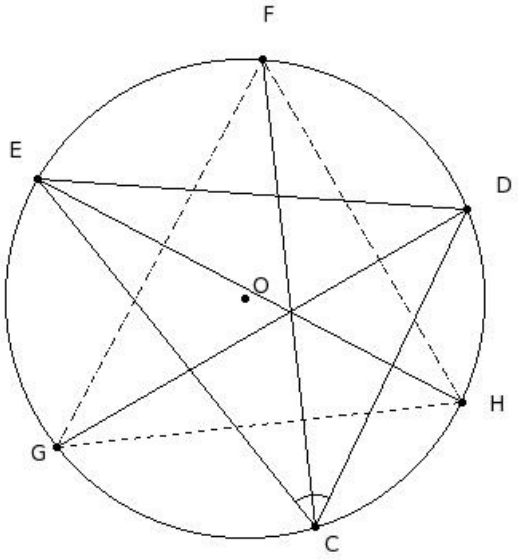
63. In the given figure, which of the following are true?

a) $\angle J + \angle OKL + \angle OLK = 2\angle J$
b) $\angle J + \angle KOL = 180°$
c) $\angle J + \angle OKL = 90°$
d) $\angle J + \angle OLK = 90°$
e) $\angle J + \angle OKL = 120°$



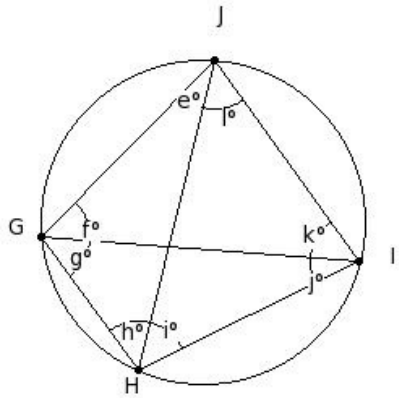
(i) {e,a,c} (ii) {b,d,c} (iii) {c,d} (iv) {a,c} (v) {b,d}

64. In the given figure, the bisectors of ∠C , ∠D & ∠E of △CDE meet the circumcircle at F , G & H. If ∠C = 64°, find ∠F



(i) 88° (ii) 68° (iii) 63° (iv) 58° (v) 73°

65. In the given figure, which of the following angle pairs are equal?



(i) {(j,f),(e,k),(g,i),(h,l)} (ii) {(e,j),(f,i),(g,l),(h,k)} (iii) {(h,j),(e,i),(g,f),(k,l)} (iv) {(i,g),(f,h),(j,e),(k,l)}

(v) {(l,e),(i,g),(k,f),(j,h)}

Assignment Key

1) (iii)	2) (ii)	3) (ii)	4) (i)	5) (v)	6) (v)
7) (v)	8) (iv)	9) (i)	10) (ii)	11) (v)	12) (iv)
13) (ii)	14) (ii)	15) (iv)	16) (i)	17) (iv)	18) (v)
19) (iii)	20) (ii)	21) (iii)	22) (v)	23) (iii)	24) (i)
25) (ii)	26) (ii)	27) (i)	28) (i)	29) (i)	30) (iii)
31) (ii)	32) (iii)	33) (i)	34) (ii)	35) (ii)	36) (v)
37) (i)	38) (iii)	39) (ii)	40) (ii)	41) (iv)	42) (v)
43) (iii)	44) (iv)	45) (iii)	46) (i)	47) (v)	48) (iii)
49) (v)	50) (i)	51) (ii)	52) (iv)	53) (iv)	54) (ii)
55) (iv)	56) (iii)	57) (i)	58) (ii)	59) (v)	60) (iv)
61) (v)	62) (i)	63) (iii)	64) (iv)	65) (ii)	