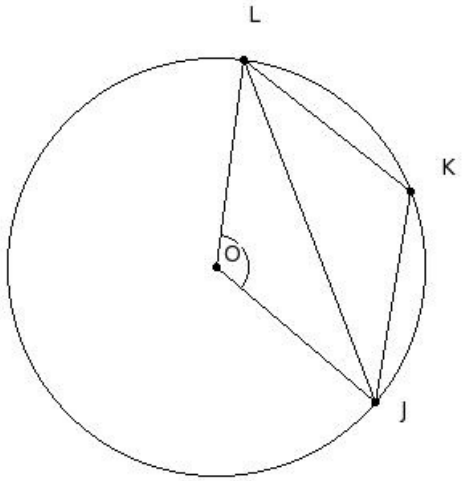
EduSahara™ Assignment

Name : Circles - Angle Properties

Chapter : Circles

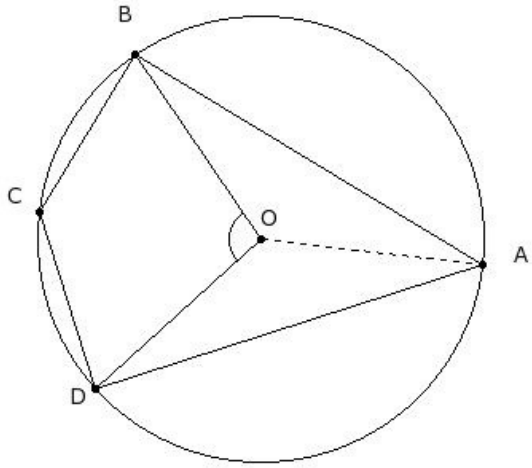
Grade : SSC Grade IX

1. O is the centre of the circle. If $\angle O = 123°$, find $\angle K$



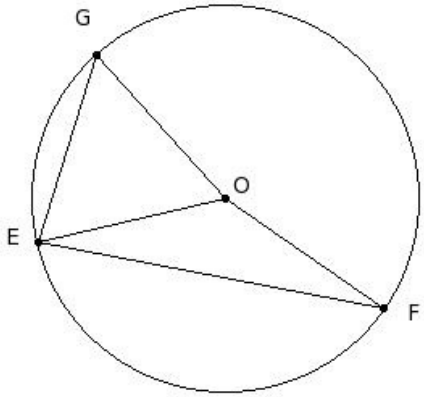
(i) 118.5° (ii) 128.5° (iii) 148.5° (iv) 123.5° (v) 133.5°

2. O is the centre of the circle. If $\angle BOD = 98°$, find $\angle A$



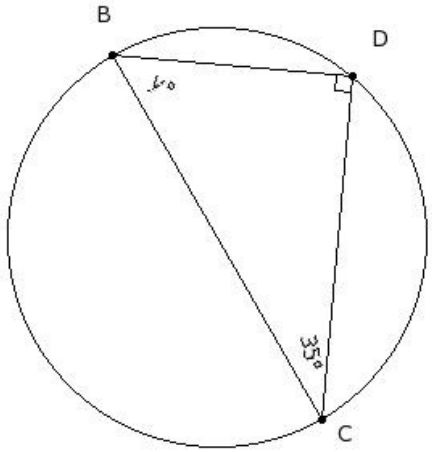
(i) 49° (ii) 59° (iii) 79° (iv) 64° (v) 54°

3. O is the centre of the circle. If $\angle FOE = 132°$ and $\angle GOE = 61°$, find $\angle FEG$



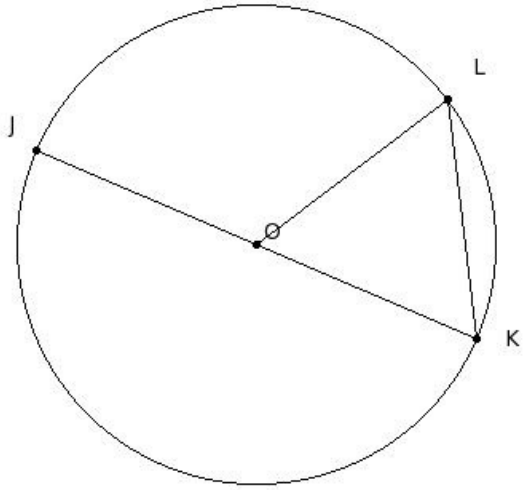
(i) 98.5° (ii) 93.5° (iii) 113.5° (iv) 88.5° (v) 83.5°

4. Find the missing angle in the following figure?



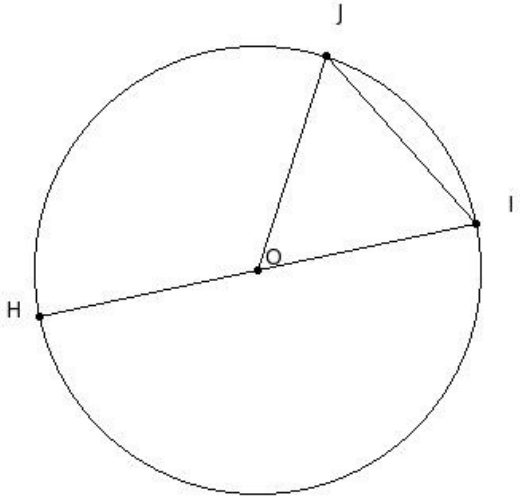
(i) 85° (ii) 70° (iii) 55° (iv) 60° (v) 65°

5. O is the centre of the circle and OL = KL. Find ∠KOL



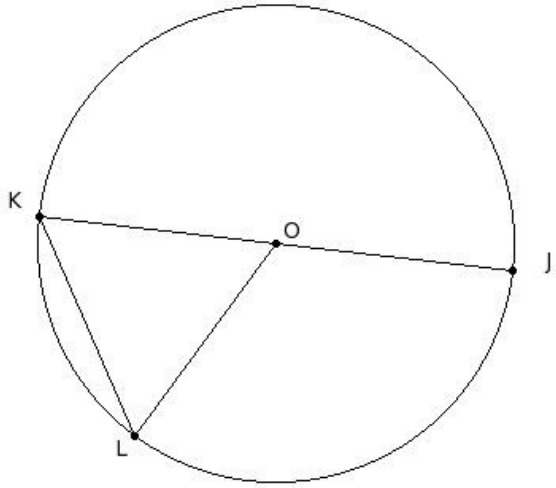
(i) 90° (ii) 75° (iii) 65° (iv) 70° (v) 60°

6. O is the centre of the circle and OJ = IJ. Find ∠JOH



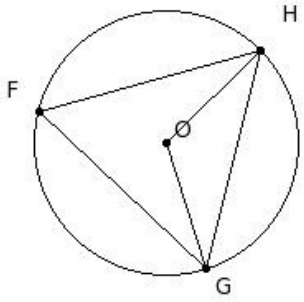
(i) 150° (ii) 130° (iii) 135° (iv) 125° (v) 120°

7. O is the centre of the circle and OL = KL. Find reflex ∠LOJ



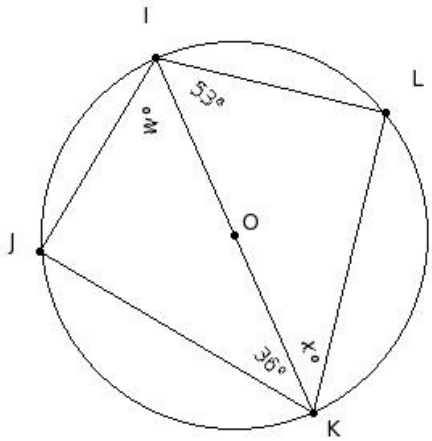
(i) 245° (ii) 255° (iii) 270° (iv) 240° (v) 250°

8. O is the centre of the circle. If $\angle F + \angle GOH = 175.5°$, find ∠GOH



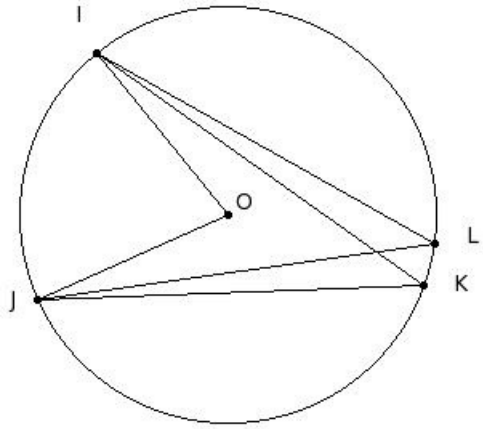
(i) 147° (ii) 127° (iii) 117° (iv) 122° (v) 132°

9. O is the centre of the circle. If ∠IKJ = 36° and ∠KIL = 53°, find w°, x°



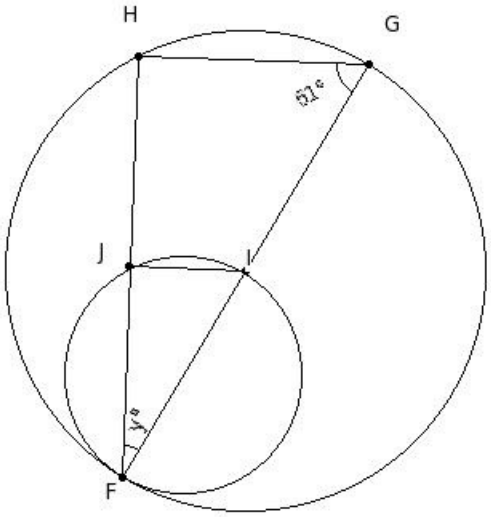
(i) 67°, 74° (ii) 47°, 64° (iii) 27°, 54° (iv) 37°, 54° (v) 54°, 37°

10. O is the centre of the circle. If ∠IOJ = 75°, find the angle ∠K



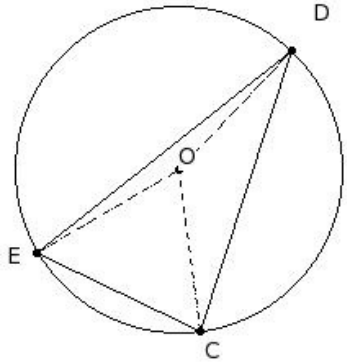
(i) 52.5° (ii) 47.5° (iii) 37.5° (iv) 67.5° (v) 42.5°

11. Two circles touch internally. I is the centre of the bigger circle and lies on the smaller circle. If ∠FGH = 61°, find ∠F



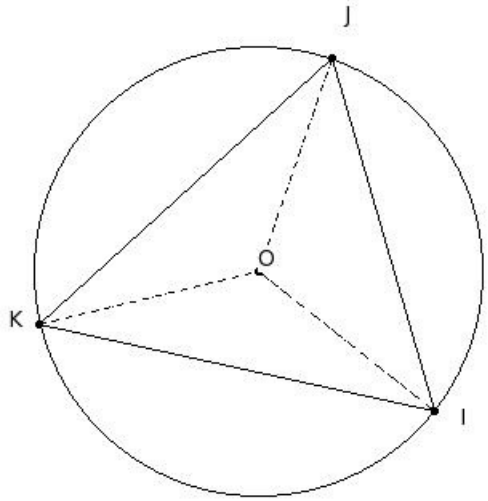
(i) 44° (ii) 39° (iii) 34° (iv) 29° (v) 59°

12. △CDE is inscribed in a circle with centre O. If ∠COD = 129° and ∠DOE = 164°, find ∠ECD



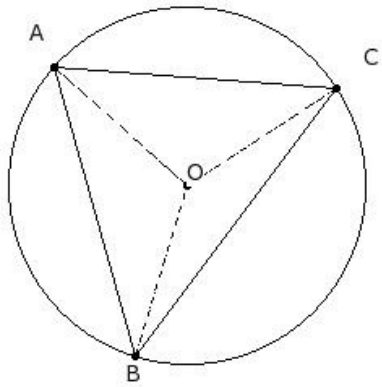
(i) 82° (ii) 92° (iii) 112° (iv) 97° (v) 87°

13. △IJK is inscribed in a circle with centre O. If ∠IOJ = 109° and ∠JOK = 123°, find ∠IJK



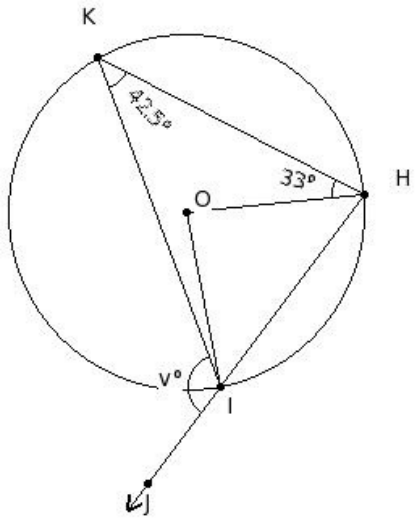
(i) 64° (ii) 94° (iii) 74° (iv) 69° (v) 79°

14. △ABC is inscribed in a circle with centre O. If ∠AOB = 115° and ∠BOC = 140°, find ∠BCA



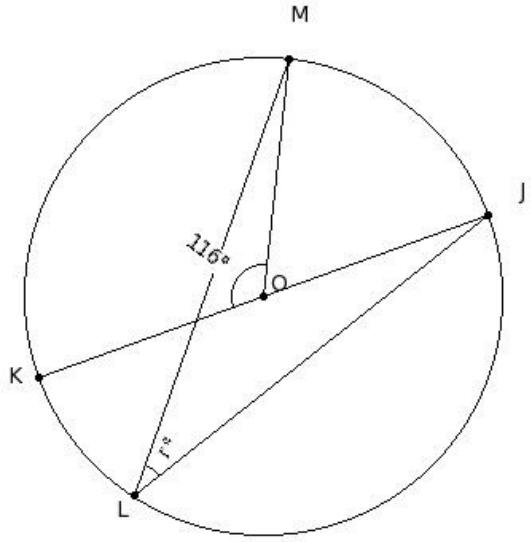
(i) 72.5° (ii) 67.5° (iii) 87.5° (iv) 62.5° (v) 57.5°

15. In the given figure, O is the centre of the circle. If ∠HKI = 42.5° and ∠OHK = 33°, find ∠JIK



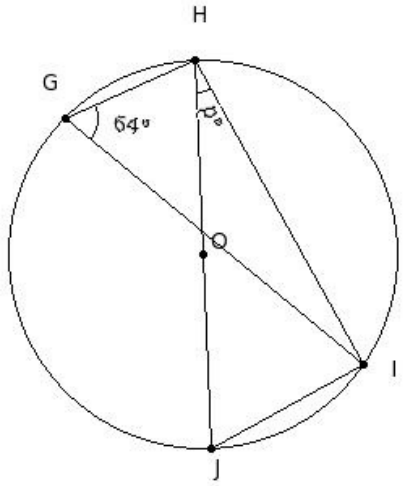
(i) 153° (ii) 138° (iii) 128° (iv) 133° (v) 123°

16. In the given figure, O is the centre of the circle and JK is a diameter. If ∠KOM = 116°, find ∠JLM



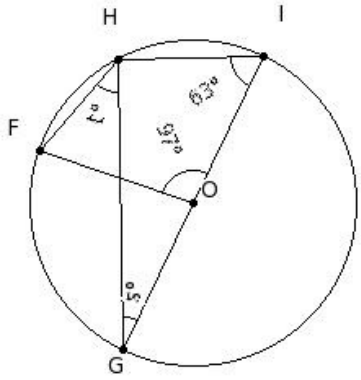
(i) 47° (ii) 42° (iii) 32° (iv) 37° (v) 62°

17. In the given figure, O is the centre of the circle and HJ is a diameter. If ∠IGH = 64°, find ∠IHJ



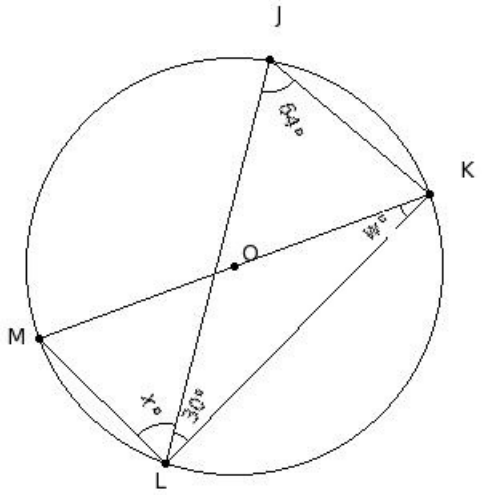
(i) 41° (ii) 26° (iii) 56° (iv) 36° (v) 31°

18. In the given figure, O is the centre of the circle and GI is a diameter. If ∠FOI = 97° and ∠OIH = 63°, find ∠GHF + ∠HGI



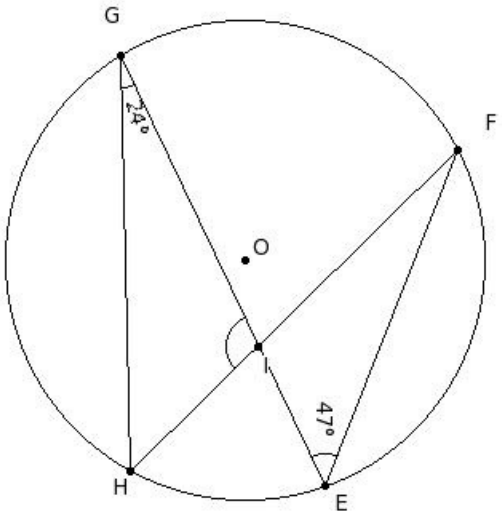
(i) 83.5° (ii) 73.5° (iii) 68.5° (iv) 98.5° (v) 78.5°

19. In the given figure, O is the centre of the circle and KM is a diameter. If ∠JLK = 30° and ∠KJL = 64°, find ∠MKL + ∠JLM



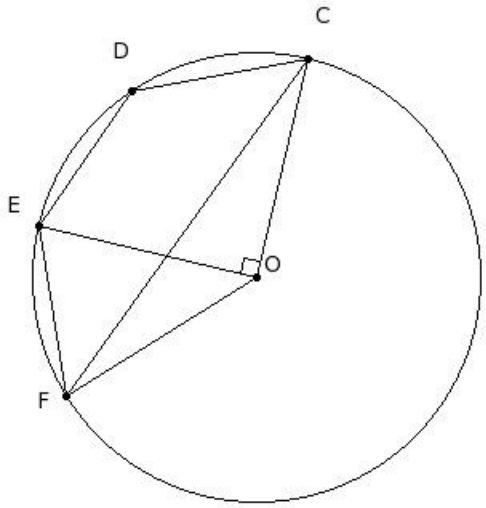
(i) 86° (ii) 101° (iii) 96° (iv) 116° (v) 91°

20. In the given figure, O is the centre of the circle. If ∠FEG = 47° and ∠EGH = 24°, find ∠GIH



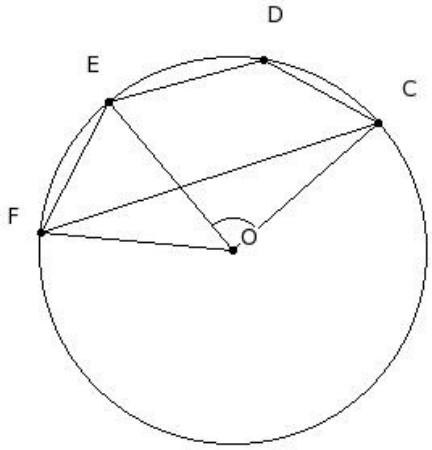
(i) 114° (ii) 109° (iii) 139° (iv) 124° (v) 119°

21. O is the centre of the circle. If Arc CE = 2 Arc EF and ∠COE = 90°, find ∠CFE



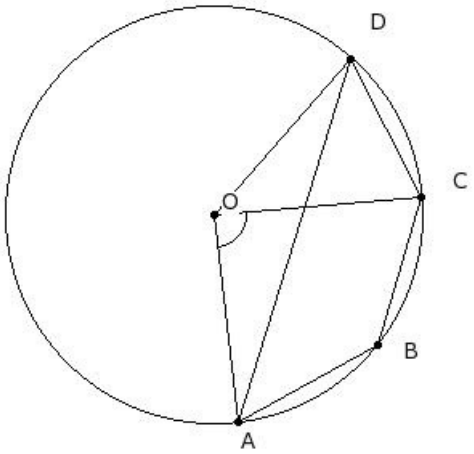
(i) 60° (ii) 45° (iii) 55° (iv) 75° (v) 50°

22. O is the centre of the circle. If Arc CE = 2 Arc EF and ∠COE = 89°, find ∠FCE



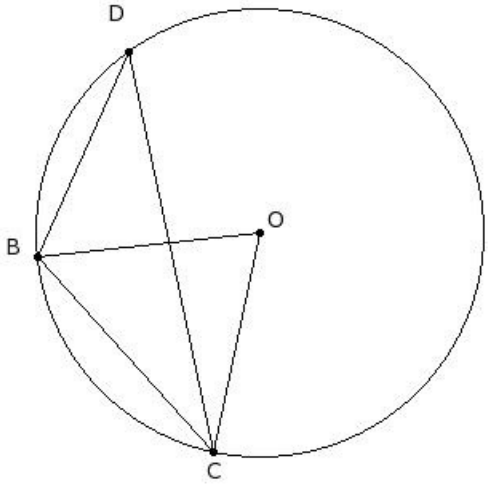
(i) 52.2° (ii) 37.2° (iii) 32.2° (iv) 27.2° (v) 22.2°

23. O is the centre of the circle. If Arc AC = 2 Arc CD and ∠AOC = 88°, find ∠ABC



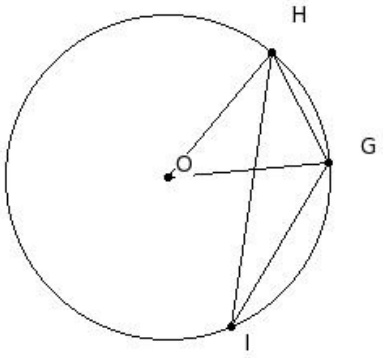
(i) 146° (ii) 141° (iii) 151° (iv) 136° (v) 166°

24. In the given figure, BC is a side of regular 6-sided polygon and BD is a side of regular 5-sided polygon inscribed in a circle with centre O. Find ∠BOC



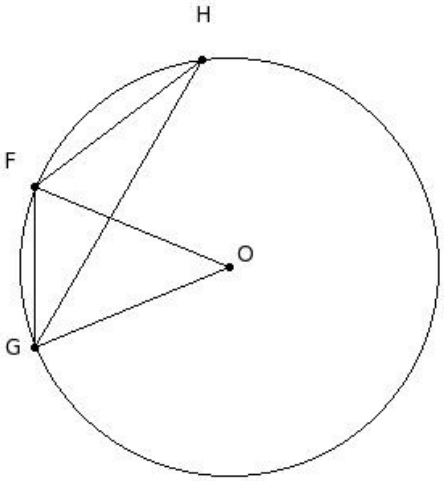
(i) 65° (ii) 90° (iii) 70° (iv) 60° (v) 75°

25. In the given figure, GH is a side of regular 5-sided polygon and GI is a side of regular 8-sided polygon inscribed in a circle with centre O. Find ∠GIH



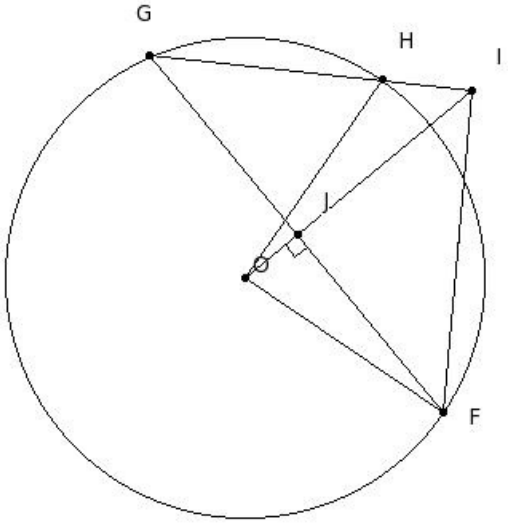
(i) 66° (ii) 46° (iii) 51° (iv) 41° (v) 36°

26. In the given figure, FG is a side of regular 6-sided polygon and FH is a side of regular 8-sided polygon inscribed in a circle with centre O. Find ∠FGH



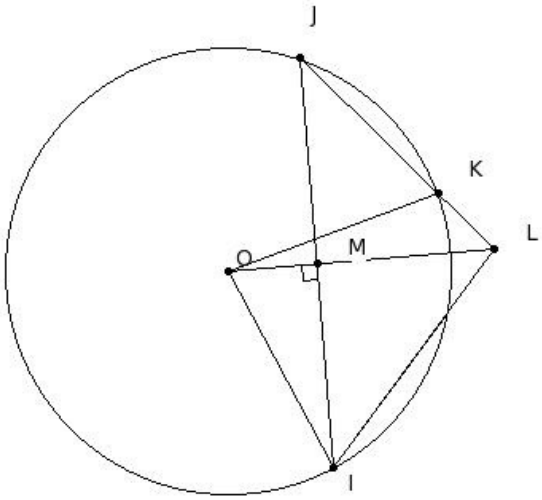
(i) 37.5° (ii) 27.5° (iii) 52.5° (iv) 22.5° (v) 32.5°

27. In the given figure, O is the centre of the circle, and OJ ⊥ FG. If ∠FGH = 44.5°, find ∠FOH



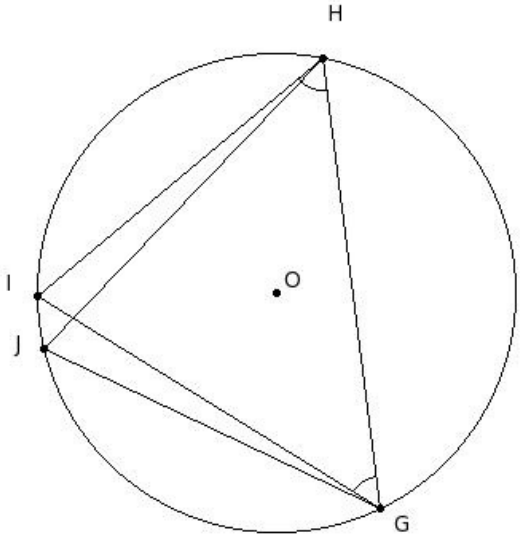
(i) 104° (ii) 94° (iii) 99° (iv) 89° (v) 119°

28. In the given figure, O is the centre of the circle, and OM ⊥ IJ. If ∠IJK = 41°, find ∠OLK



(i) 64° (ii) 49° (iii) 59° (iv) 79° (v) 54°

29. In the given figure, O is the centre of the circle. If ∠IGH = 50.98° and ∠GHI = 57.5°, find the angle ∠GJH



(i) 101.52° (ii) 76.52° (iii) 81.52° (iv) 71.52° (v) 86.52°

30. Which of the following statements are true?

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

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

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

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

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

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

33. An arc subtends 136° in its alternate segment. The arc is

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

34. An arc subtends 49° in its alternate segment. The arc is

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

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

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

36. An arc subtends 53° in its alternate segment. The angle made by its corresponding major arc at the centre is

(i) 264° (ii) 269° (iii) 259° (iv) 254° (v) 284°

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

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

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

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

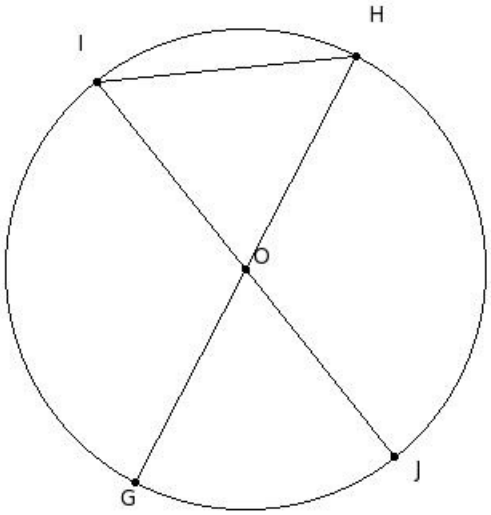
39. Angle subtended by the major arc at the centre is

(i) acute angle (ii) zero angle (iii) reflex angle (iv) obtuse angle (v) right angle

40. Angle subtended in the major segment is

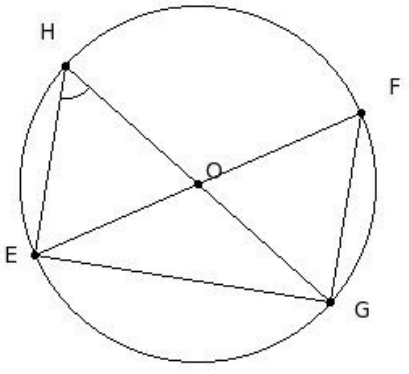
(i) straight angle (ii) acute angle (iii) zero angle (iv) right angle (v) obtuse angle

41. In the given figure, GH & IJ are diameters of the circle. If ∠GHI = 57° find, ∠HOI



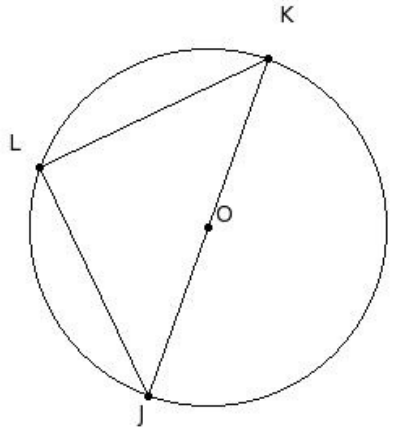
(i) 96° (ii) 81° (iii) 71° (iv) 76° (v) 66°

42. In the given figure, EF & GH are diameters of the circle. If ∠EHG = 58°, find ∠OGF



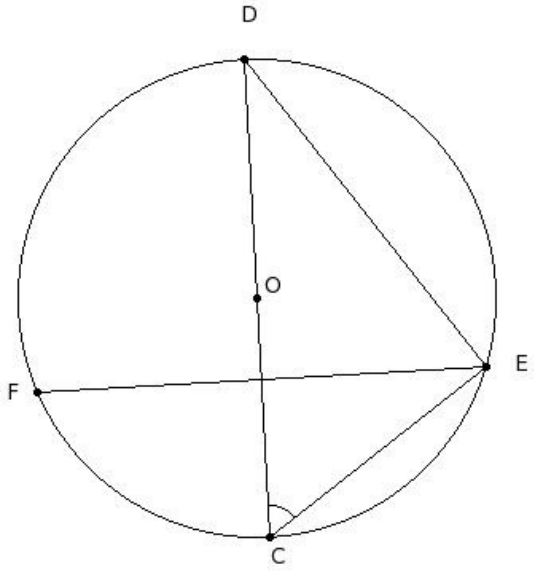
(i) 73° (ii) 58° (iii) 88° (iv) 68° (v) 63°

43. In the given figure JL & KL are equal length chords of the circle. Find ∠LJK



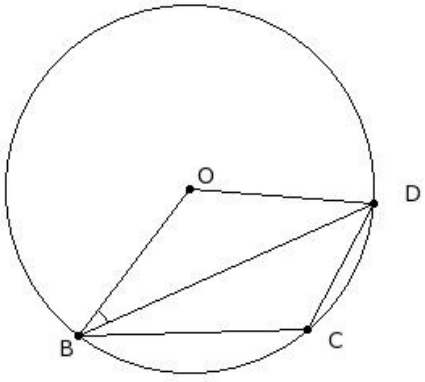
(i) 45° (ii) 55° (iii) 60° (iv) 75° (v) 50°

44. In the given figure, CD is a diameter of the circle with centre O. If ∠DCE = 54.86° and DE = DF, find ∠FEC



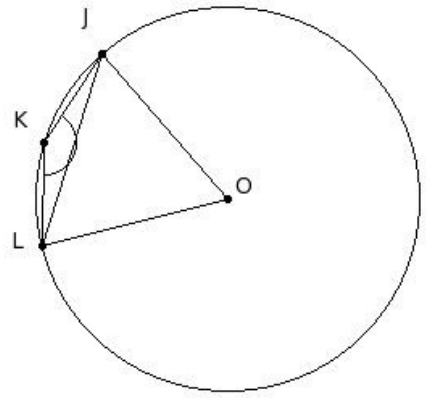
(i) 40.14° (ii) 45.14° (iii) 35.14° (iv) 50.14° (v) 65.14°

45. In the given figure, O is the centre of the circle. If ∠OBD = 28.5°, find ∠C



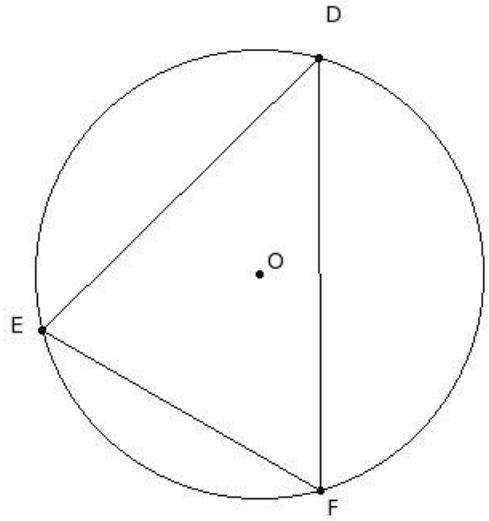
(i) 128.5° (ii) 118.5° (iii) 148.5° (iv) 133.5° (v) 123.5°

46. In the given figure, O is the centre of the circle. If ∠JKL = 148°, find ∠OJL



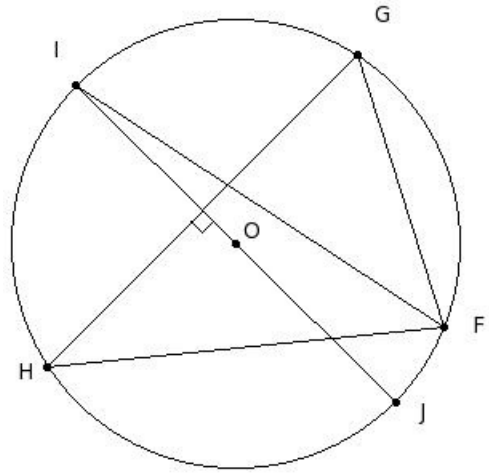
(i) 63° (ii) 58° (iii) 68° (iv) 88° (v) 73°

47. O is the centre of the circle. If ∠EFD = 60°, find the angle ∠OED



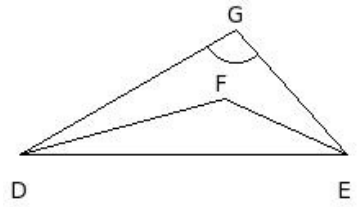
(i) 30° (ii) 35° (iii) 40° (iv) 45° (v) 60°

48. IJ is the perpendicular bisector of side GH of △FGH. Given ∠FGH = 62° and ∠IFH = 39° , find ∠FHG



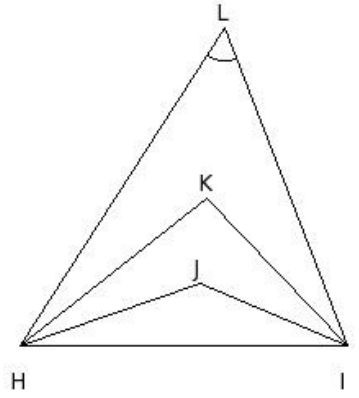
(i) 50° (ii) 45° (iii) 70° (iv) 40° (v) 55°

49. In the given figure, △GDE is a scalene triangle. FD bisects ∠GDE. Similarly EF bisects ∠DEG. Given ∠EGD = 102°, find ∠EFD



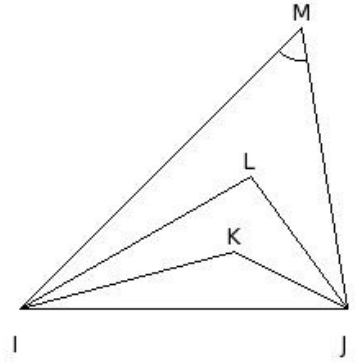
(i) 146° (ii) 156° (iii) 141° (iv) 151° (v) 171°

50. In the given figure, △LHI is a scalene triangle. JH & KH trisect ∠LHI. Similarly IJ & IK trisect ∠HIL. Given ∠ILH = 54°, find ∠IJH



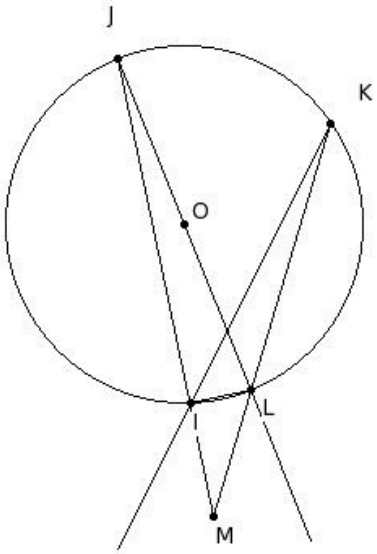
(i) 138° (ii) 168° (iii) 143° (iv) 148° (v) 153°

51. In the given figure, △MIJ is a scalene triangle. KI & LI trisect ∠MIJ. Similarly JK & JL trisect ∠IJM. Given ∠JMI = 54°, find ∠JLI



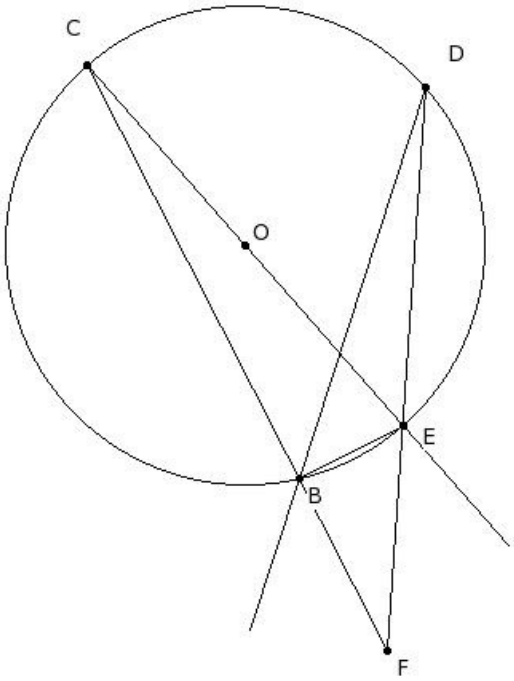
(i) 126° (ii) 111° (iii) 101° (iv) 96° (v) 106°

52. In the given figure, ∠IKL = 10° and ∠IML = 28°, find ∠KIL



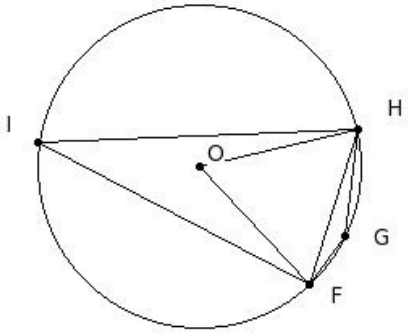
(i) 82° (ii) 62° (iii) 52° (iv) 57° (v) 67°

53. In the given figure, ∠BDE = 14° and ∠BFE = 31°, find ∠CEB



(i) 81° (ii) 106° (iii) 91° (iv) 86° (v) 76°

54. In the given figure, FH is a chord which is equal to the radius of the circle. Find ∠I and ∠G



(i) 60° & 120° (ii) 30° & 150° (iii) 50° & 130° (iv) 45° & 135° (v) 40° & 140°

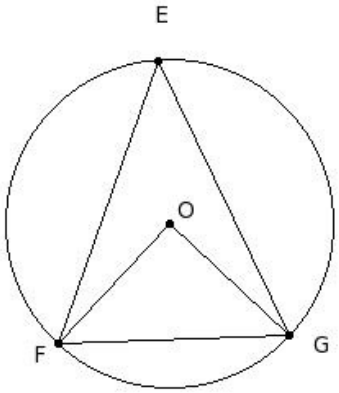
55. Which of the following statements are true?

a) Angle subtended in the major segment is obtuse.
b) Angle subtended by the major arc in its alternate 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) {d,c} (ii) {a,d,e} (iii) {a,b,c} (iv) {a,b} (v) {b,c,e}

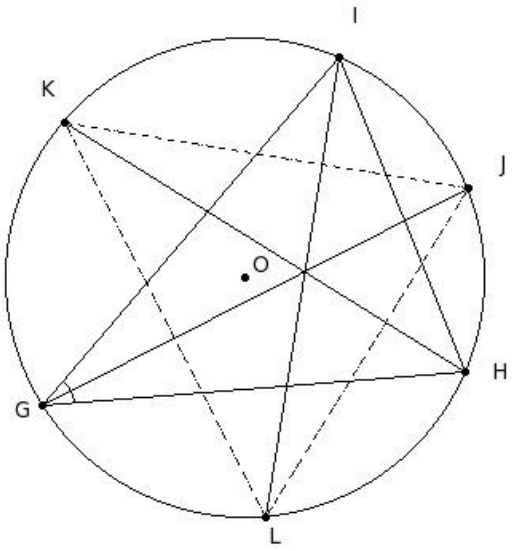
56. In the given figure, which of the following are true?

a) $\angle E + \angle OFG + \angle OGF = 2\angle E$
b) $\angle E + \angle OFG = 120°$
c) $\angle E + \angle OGF = 90°$
d) $\angle E + \angle OFG = 90°$
e) $\angle E + \angle FOG = 180°$



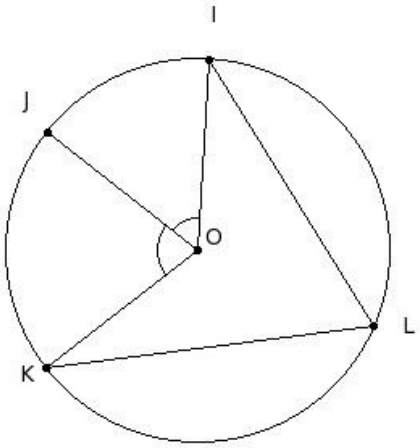
(i) {b,d,c} (ii) {e,a,c} (iii) {a,c} (iv) {c,d} (v) {b,d}

57. In the given figure, the bisectors of $\angle G$, $\angle H$ & $\angle I$ of $\triangle GHI$ meet the circumcircle at J , K & L. If $\angle G = 45°$, find $\angle J$



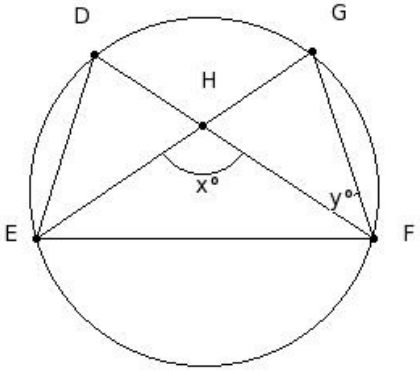
(i) 82.5° (ii) 97.5° (iii) 72.5° (iv) 77.5° (v) 67.5°

58. In the given figure, O is the centre of the circle. Given ∠ILK = 65.5° & ∠JOK = 76°, find ∠IOJ



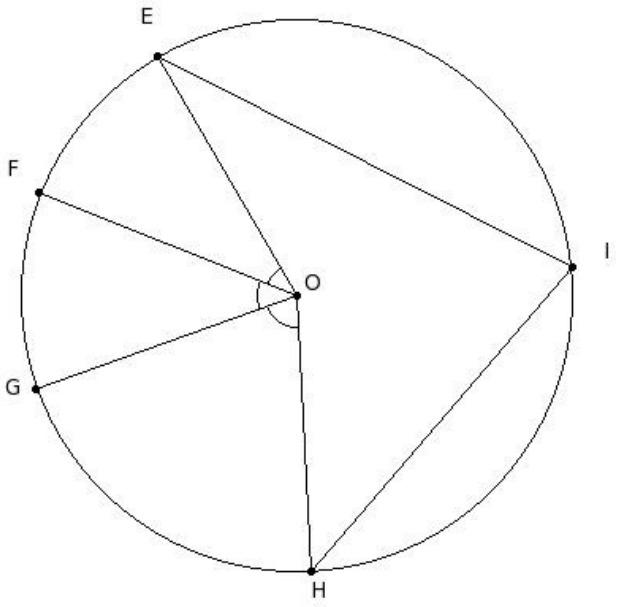
(i) 85° (ii) 60° (iii) 65° (iv) 70° (v) 55°

59. In the given figure, chords DF & EG meet at H. Given x = 112° and y = 38°, find ∠EDF



(i) 89° (ii) 104° (iii) 84° (iv) 79° (v) 74°

60. In the given figure, O is the centre of the circle. Given ∠EIH = 76°, ∠FOG = 41° and ∠EOF = 38°, find ∠GOH



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

Assignment Key

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