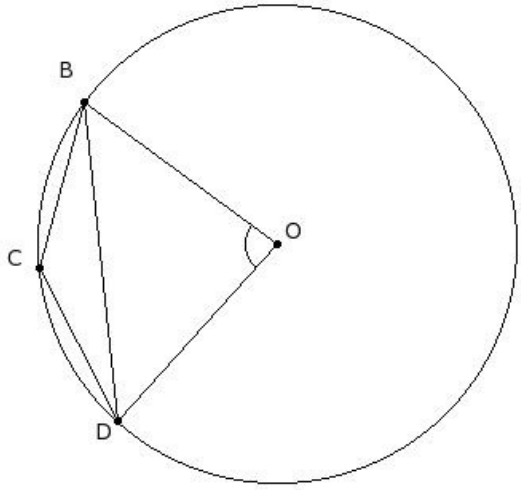
EduSahara™ Assignment

Name : Circles - Angle Properties

Chapter : Circles

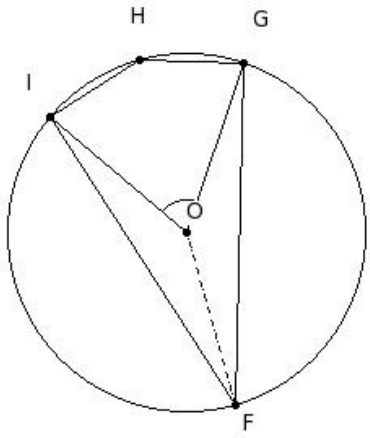
Grade : SSC Grade IX

1. O is the centre of the circle. If $\angle O = 84°$, find $\angle C$



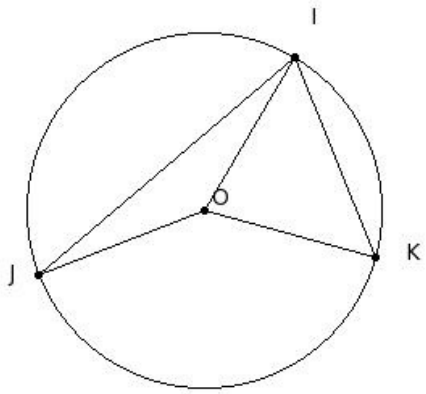
(i) 138° (ii) 143° (iii) 168° (iv) 148° (v) 153°

2. O is the centre of the circle. If $\angle GOI = 68°$, find $\angle F$



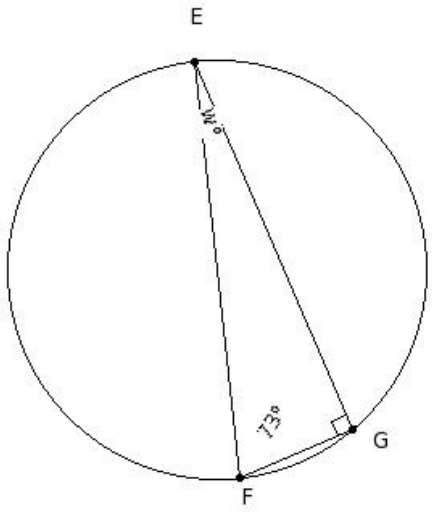
(i) 39° (ii) 49° (iii) 64° (iv) 34° (v) 44°

3. O is the centre of the circle. If $\angle JOI = 142°$ and $\angle KOI = 75°$, find $\angle JIK$



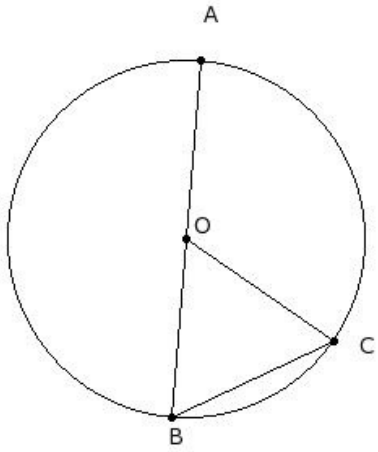
(i) 81.5° (ii) 86.5° (iii) 76.5° (iv) 101.5° (v) 71.5°

4. Find the missing angle in the following figure?



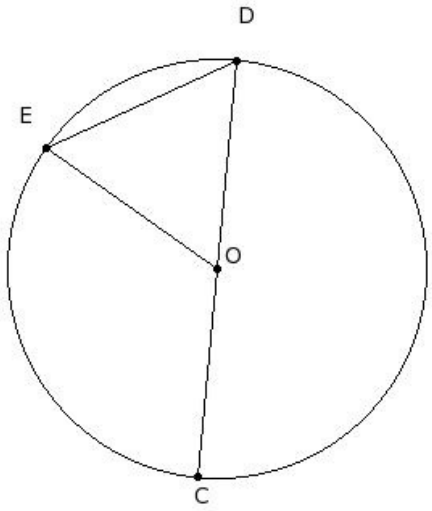
(i) 32° (ii) 27° (iii) 22° (iv) 17° (v) 47°

5. O is the centre of the circle and OC = BC. Find ∠BOC



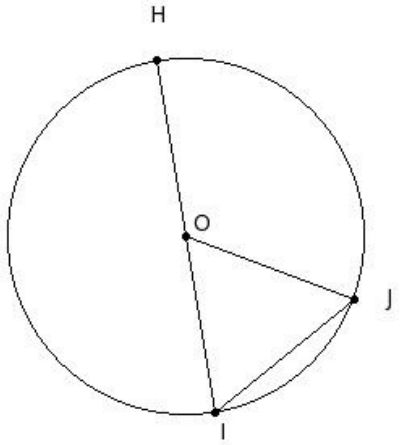
(i) 65° (ii) 75° (iii) 60° (iv) 70° (v) 90°

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



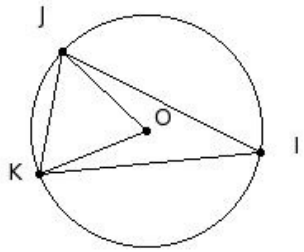
(i) 120° (ii) 150° (iii) 135° (iv) 125° (v) 130°

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



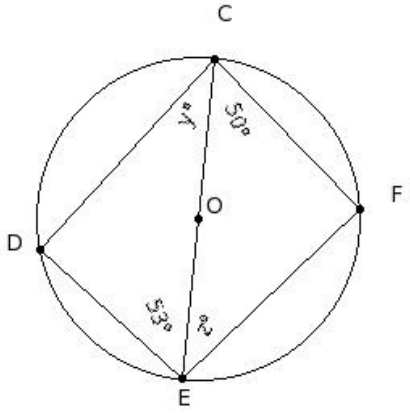
(i) 245° (ii) 240° (iii) 250° (iv) 270° (v) 255°

8. O is the centre of the circle. If $\angle I + \angle JOK = 97.5°$, find ∠JOK



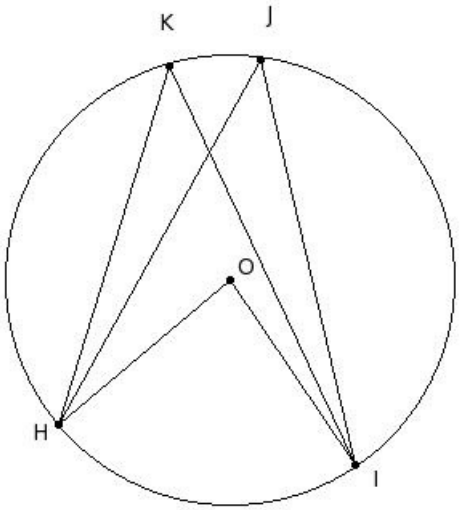
(i) 75° (ii) 95° (iii) 65° (iv) 70° (v) 80°

9. O is the centre of the circle. If ∠CED = 53° and ∠ECF = 50°, find y°, z°



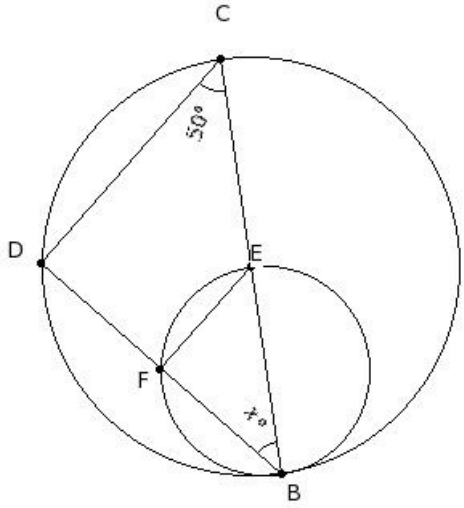
(i) 30°, 37° (ii) 50°, 47° (iii) 40°, 37° (iv) 37°, 40° (v) 70°, 57°

10. O is the centre of the circle. If ∠HOI = 84°, find the angle ∠J



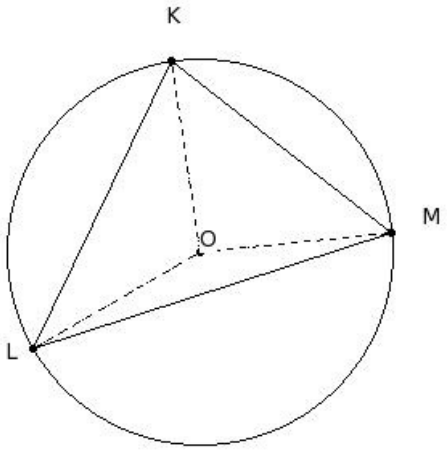
(i) 72° (ii) 57° (iii) 42° (iv) 52° (v) 47°

11. Two circles touch internally. E is the centre of the bigger circle and lies on the smaller circle. If ∠BCD = 50°, find ∠B



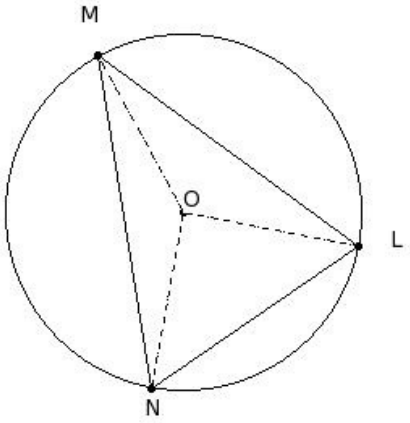
(i) 40° (ii) 45° (iii) 70° (iv) 50° (v) 55°

12. △KLM is inscribed in a circle with centre O. If ∠KOL = 111° and ∠LOM = 156°, find ∠MKL



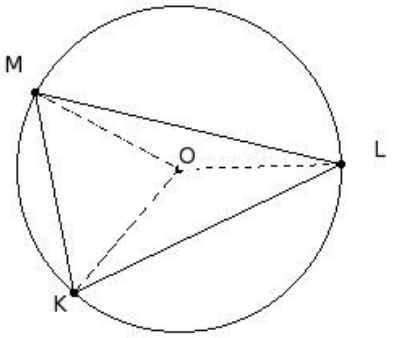
(i) 83° (ii) 108° (iii) 78° (iv) 93° (v) 88°

13. △LMN is inscribed in a circle with centre O. If ∠LOM = 130° and ∠MON = 141°, find ∠LMN



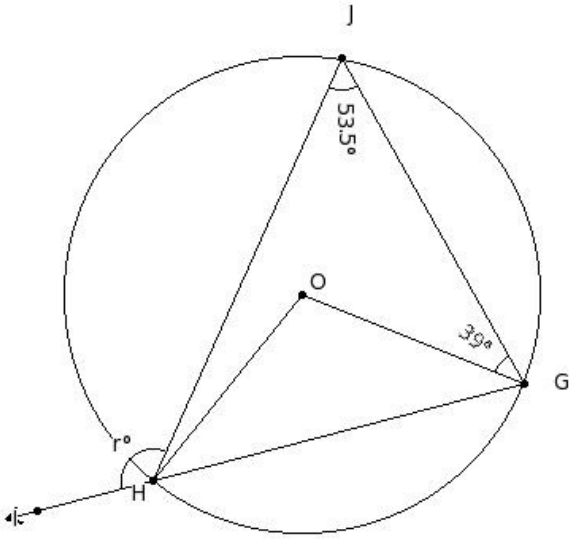
(i) 59.5° (ii) 44.5° (iii) 54.5° (iv) 74.5° (v) 49.5°

14. △KLM is inscribed in a circle with centre O. If ∠KOL = 132° and ∠LOM = 150°, find ∠LMK



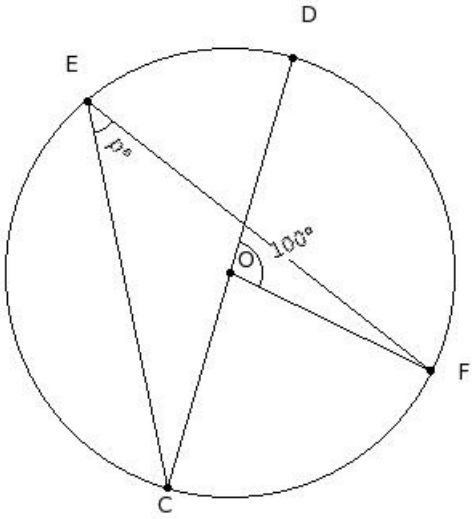
(i) 96° (ii) 71° (iii) 76° (iv) 81° (v) 66°

15. In the given figure, O is the centre of the circle. If ∠GJH = 53.5° and ∠OGJ = 39°, find ∠IHJ



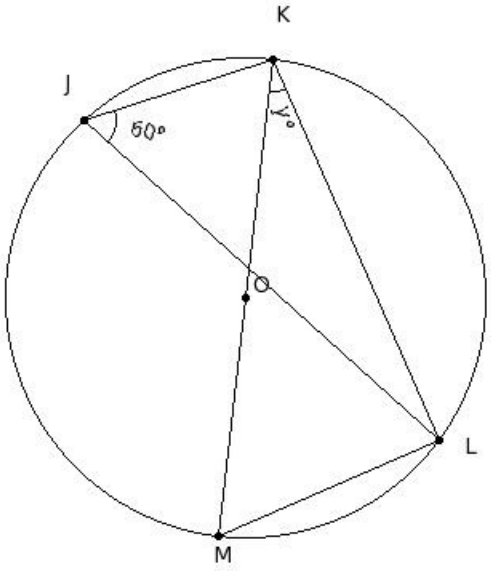
(i) 144° (ii) 159° (iii) 129° (iv) 134° (v) 139°

16. In the given figure, O is the centre of the circle and CD is a diameter. If ∠DOF = 100°, find ∠CEF



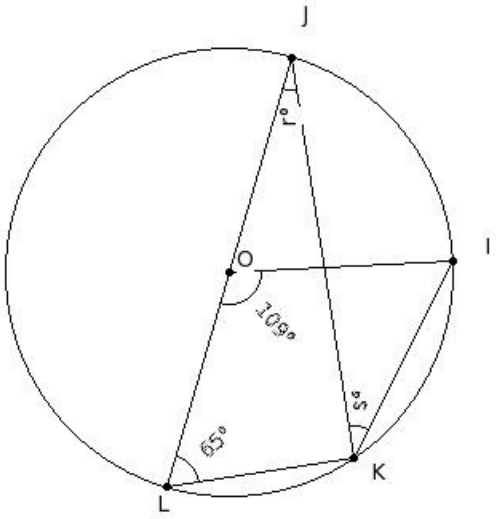
(i) 55° (ii) 70° (iii) 45° (iv) 50° (v) 40°

17. In the given figure, O is the centre of the circle and KM is a diameter. If ∠LJK = 60°, find ∠LKM



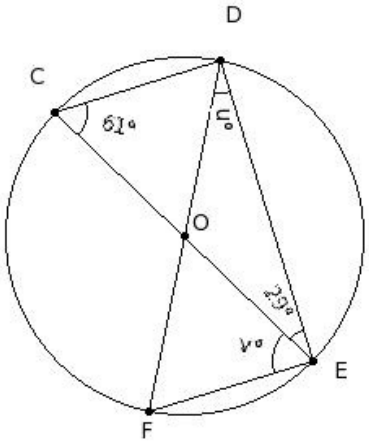
(i) 35° (ii) 45° (iii) 30° (iv) 40° (v) 60°

18. In the given figure, O is the centre of the circle and JL is a diameter. If ∠IOL = 109° and ∠OLK = 65°, find ∠JKI + ∠KJL



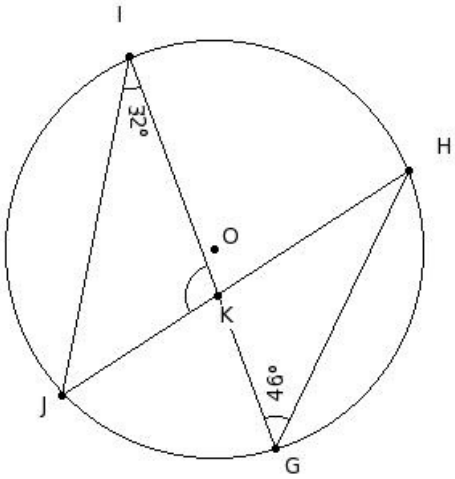
(i) 65.5° (ii) 60.5° (iii) 75.5° (iv) 70.5° (v) 90.5°

19. In the given figure, O is the centre of the circle and DF is a diameter. If ∠CED = 29° and ∠DCE = 61°, find ∠FDE + ∠CEF



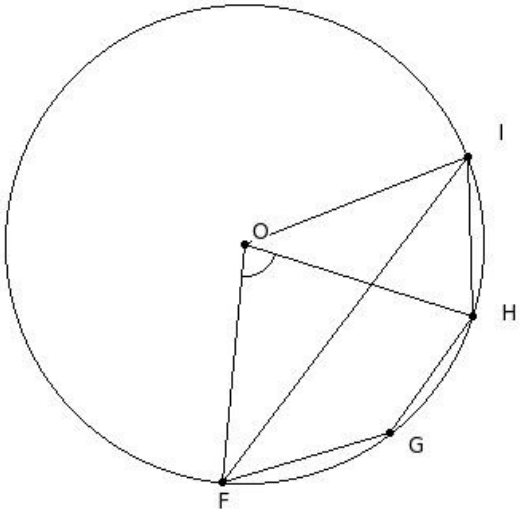
(i) 105° (ii) 120° (iii) 90° (iv) 95° (v) 100°

20. In the given figure, O is the centre of the circle. If ∠HGI = 46° and ∠GIJ = 32°, find ∠IKJ



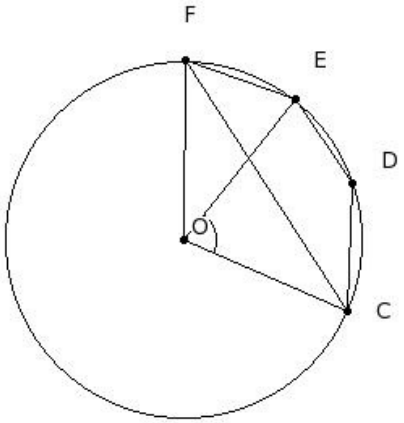
(i) 117° (ii) 112° (iii) 132° (iv) 102° (v) 107°

21. O is the centre of the circle. If Arc FH = 2 Arc HI and ∠FOH = 78°, find ∠FIH



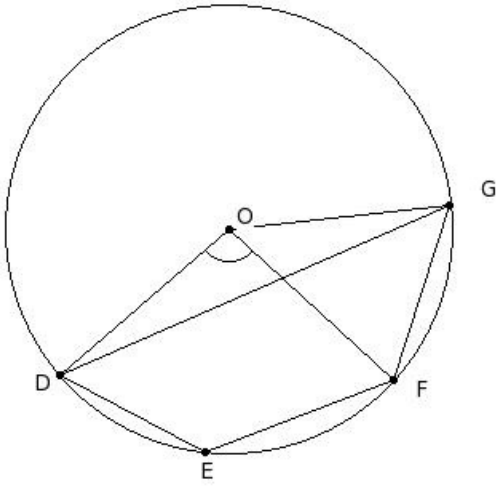
(i) 69° (ii) 49° (iii) 54° (iv) 44° (v) 39°

22. O is the centre of the circle. If Arc CE = 2 Arc EF and ∠COE = 75°, find ∠FCE



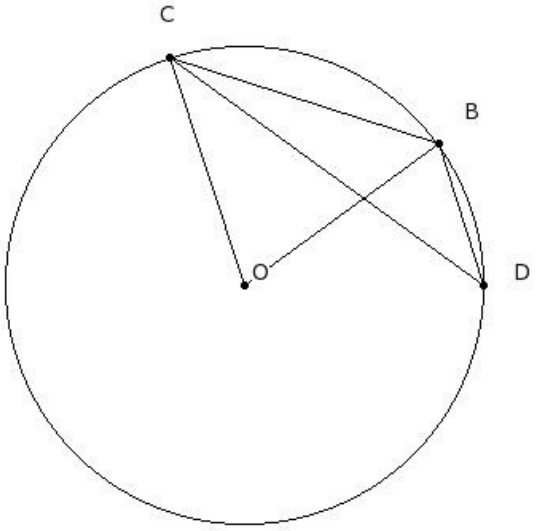
(i) 28.8° (ii) 48.8° (iii) 18.8° (iv) 33.8° (v) 23.8°

23. O is the centre of the circle. If Arc DF = 2 Arc FG and ∠DOF = 97°, find ∠DEF



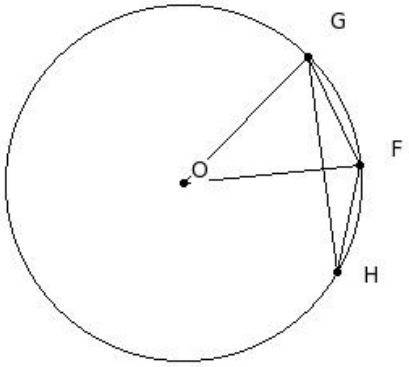
(i) 131.5° (ii) 136.5° (iii) 141.5° (iv) 146.5° (v) 161.5°

24. In the given figure, BC is a side of regular 10-sided polygon and BD is a side of regular 5-sided polygon inscribed in a circle with centre O. Find ∠BOC



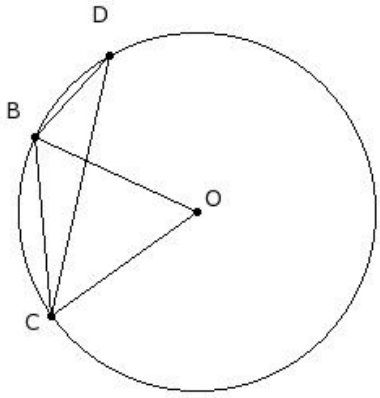
(i) 51° (ii) 36° (iii) 66° (iv) 41° (v) 46°

25. In the given figure, FG is a side of regular 10-sided polygon and FH is a side of regular 9-sided polygon inscribed in a circle with centre O. Find ∠FHG



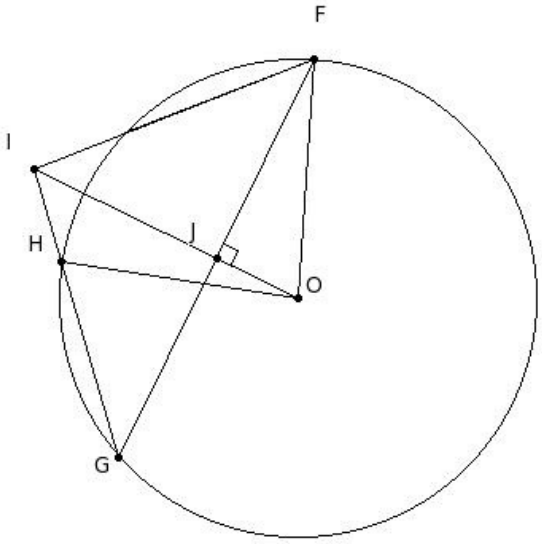
(i) 48° (ii) 18° (iii) 33° (iv) 23° (v) 28°

26. In the given figure, BC is a side of regular 10-sided polygon and BD is a side of regular 6-sided polygon inscribed in a circle with centre O. Find ∠BCD



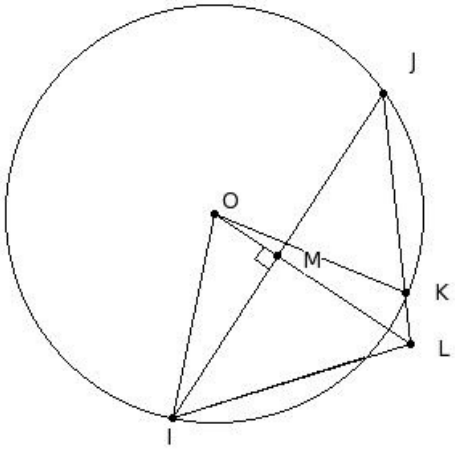
(i) 35° (ii) 30° (iii) 40° (iv) 60° (v) 45°

27. In the given figure, O is the centre of the circle, and OJ ⊥ FG. If ∠FGH = 42.5°, find ∠FOH



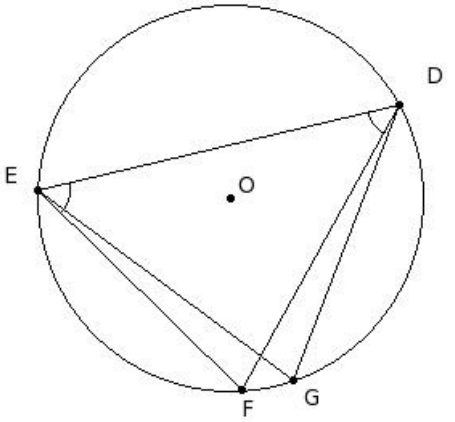
(i) 85° (ii) 115° (iii) 95° (iv) 90° (v) 100°

28. In the given figure, O is the centre of the circle, and OM ⊥ IJ. If ∠IJK = 39.5°, find ∠OLK



(i) 50.5° (ii) 55.5° (iii) 60.5° (iv) 65.5° (v) 80.5°

29. In the given figure, O is the centre of the circle. If ∠FDE = 47.77° and ∠DEF = 57.57°, find the angle ∠DGE



(i) 104.66° (ii) 89.66° (iii) 79.66° (iv) 74.66° (v) 84.66°

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 subtended by equal length arcs in two circles are equal.
d) Angles in the same segment are equal.

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

31. 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) $\frac{x°}{2}$

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

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

33. An arc subtends 152° in its alternate segment. The arc is

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

34. An arc subtends 50° in its alternate segment. The arc is

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

35. An arc subtends 49° in its alternate segment. Its corresponding major arc subtends what angle in its (major arc) alternate segment?

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

36. An arc subtends 30° in its alternate segment. The angle made by its corresponding major arc at the centre is

(i) 330° (ii) 315° (iii) 305° (iv) 300° (v) 310°

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

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

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

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

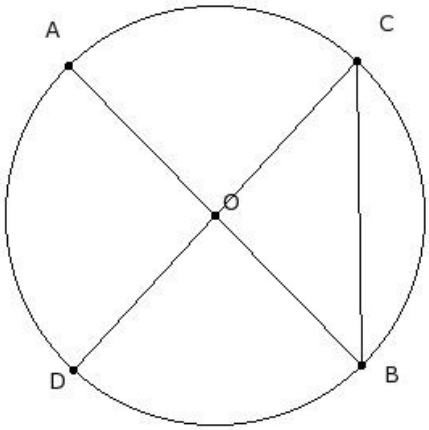
39. Angle subtended by the major arc at the centre is

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

40. Angle subtended in the major segment is

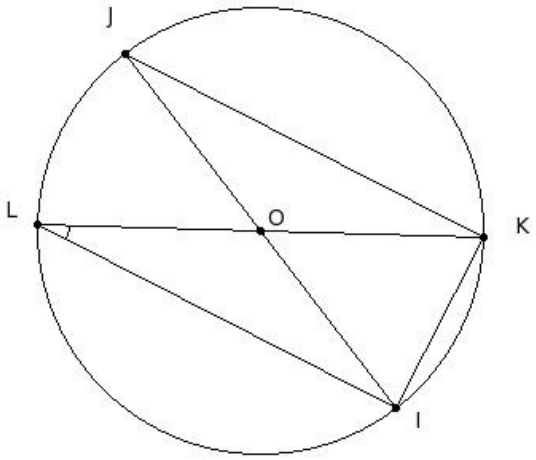
(i) obtuse angle (ii) acute angle (iii) reflex angle (iv) zero angle (v) right angle

41. In the given figure, AB & CD are diameters of the circle. If ∠ABC = 43.5° find, ∠BOC



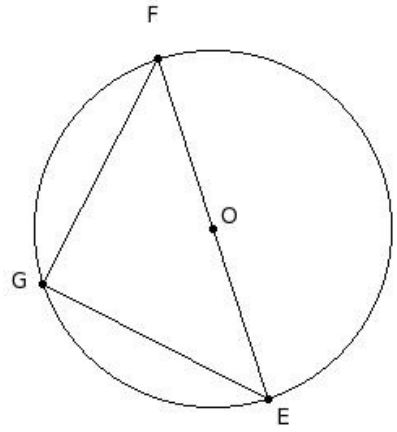
(i) 108° (ii) 103° (iii) 98° (iv) 93° (v) 123°

42. In the given figure, IJ & KL are diameters of the circle. If ∠ILK = 25°, find ∠OKJ



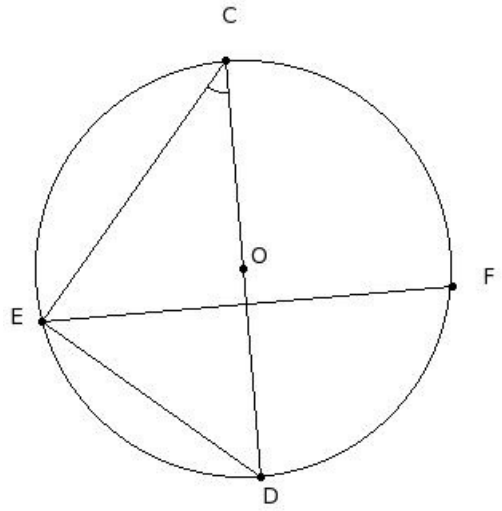
(i) 35° (ii) 30° (iii) 40° (iv) 25° (v) 55°

43. In the given figure EG & FG are equal length chords of the circle. Find ∠GEF



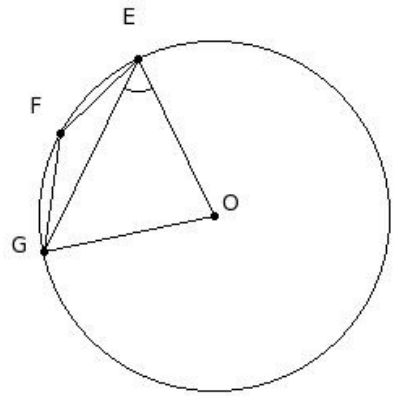
(i) 60° (ii) 50° (iii) 55° (iv) 75° (v) 45°

44. In the given figure, CD is a diameter of the circle with centre O. If ∠DCE = 40.04° and DE = DF, find ∠FEC



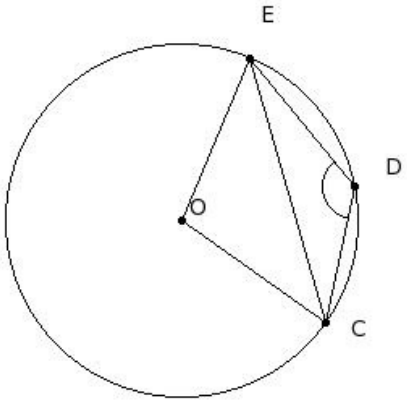
(i) 49.96° (ii) 54.96° (iii) 79.96° (iv) 59.96° (v) 64.96°

45. In the given figure, O is the centre of the circle. If ∠OEG = 52°, find ∠F



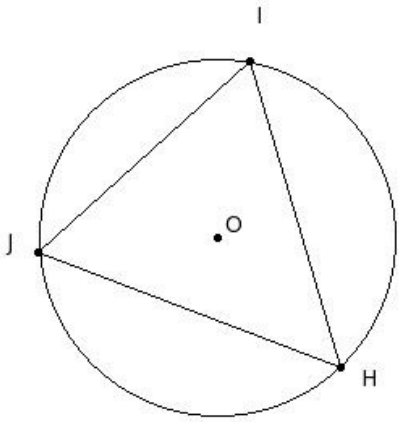
(i) 147° (ii) 172° (iii) 142° (iv) 157° (v) 152°

46. In the given figure, O is the centre of the circle. If ∠CDE = 128°, find ∠OCE



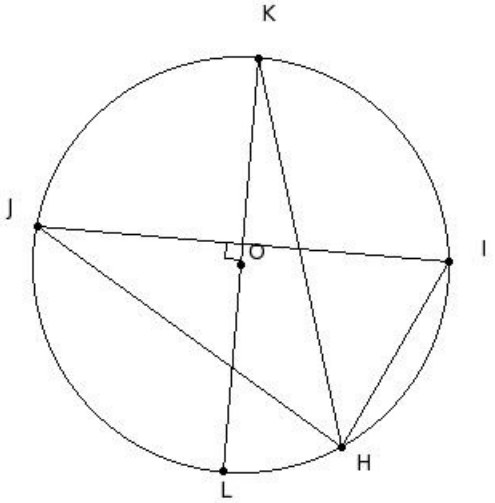
(i) 68° (ii) 38° (iii) 53° (iv) 43° (v) 48°

47. O is the centre of the circle. If ∠IJH = 63°, find the angle ∠OIH



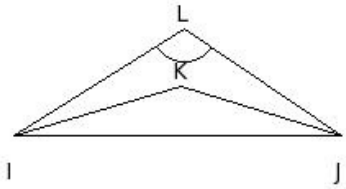
(i) 27° (ii) 37° (iii) 32° (iv) 57° (v) 42°

48. KL is the perpendicular bisector of side IJ of △HIJ. Given ∠HIJ = 65° and ∠KHJ = 42° , find ∠HJI



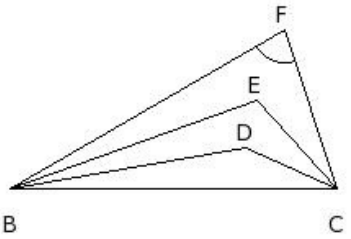
(i) 36° (ii) 31° (iii) 41° (iv) 46° (v) 61°

49. In the given figure, △LIJ is a scalene triangle. KI bisects ∠LIJ. Similarly JK bisects ∠IJL. Given ∠JLI = 114°, find ∠JKI



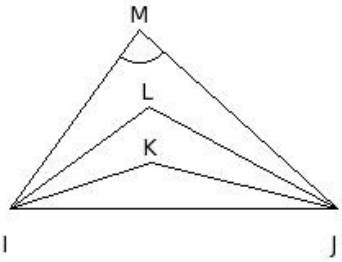
(i) 152° (ii) 162° (iii) 147° (iv) 157° (v) 177°

50. In the given figure, △FBC is a scalene triangle. DB & EB trisect ∠FBC. Similarly CD & CE trisect ∠BCF. Given ∠CFB = 78°, find ∠CDB



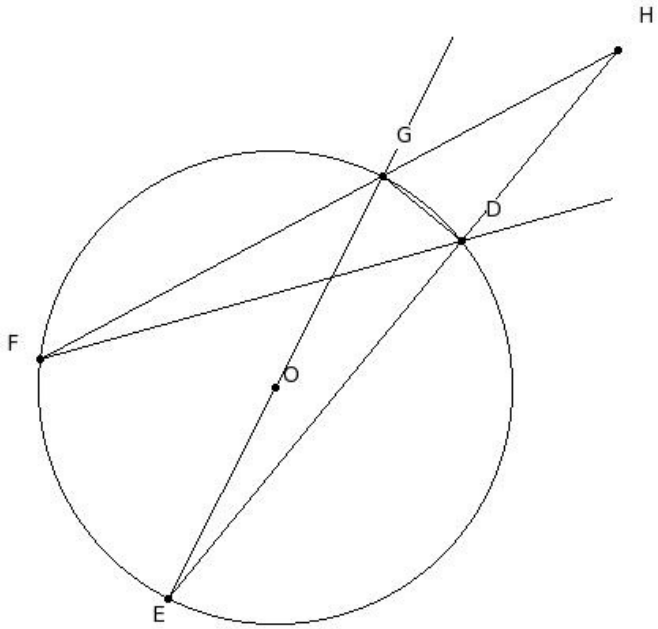
(i) 146° (ii) 156° (iii) 151° (iv) 176° (v) 161°

51. In the given figure, △MIJ is a scalene triangle. KI & LI trisect ∠MIJ. Similarly JK & JL trisect ∠IJM. Given ∠JMI = 84°, find ∠JLI



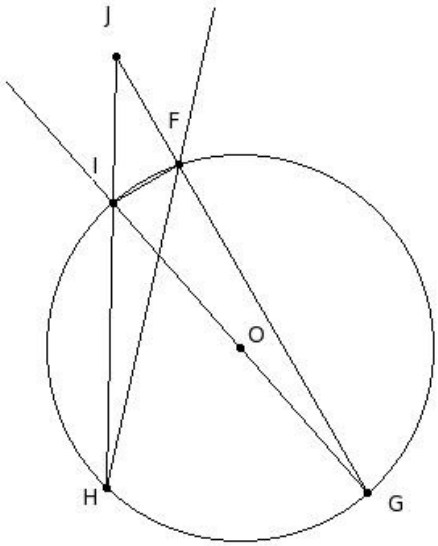
(i) 121° (ii) 116° (iii) 131° (iv) 126° (v) 146°

52. In the given figure, ∠DFG = 12° and ∠DHG = 23°, find ∠FDG



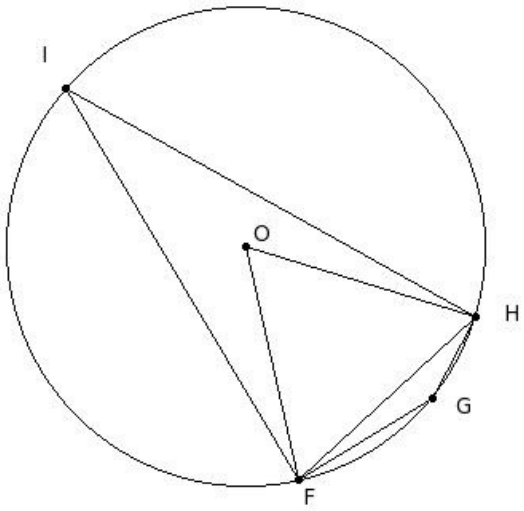
(i) 55° (ii) 65° (iii) 60° (iv) 85° (v) 70°

53. In the given figure, ∠FHI = 11° and ∠FJI = 31°, find ∠GIF



(i) 79° (ii) 109° (iii) 84° (iv) 94° (v) 89°

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



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

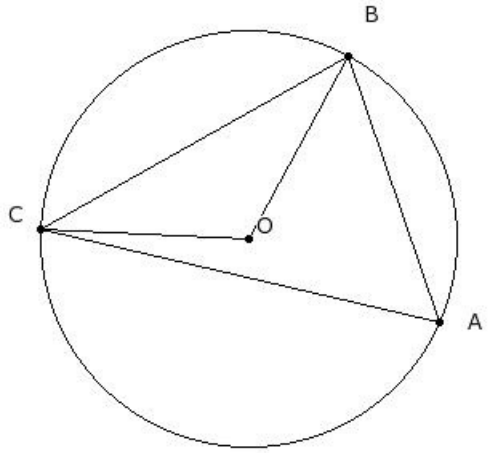
55. Which of the following statements are true?

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

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

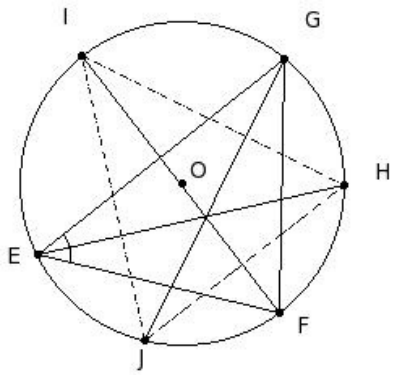
56. In the given figure, which of the following are true?

a) $\angle A + \angle BOC = 180°$
b) $\angle A + \angle OBC + \angle OCB = 2\angle A$
c) $\angle A + \angle OCB = 90°$
d) $\angle A + \angle OBC = 120°$
e) $\angle A + \angle OBC = 90°$



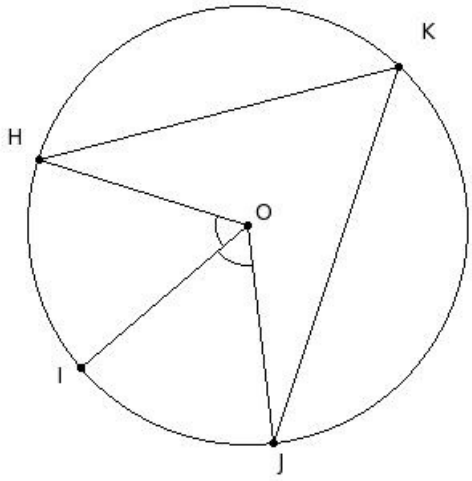
(i) {b,e,c} (ii) {c,e} (iii) {d,a,c} (iv) {a,c} (v) {b,e}

57. In the given figure, the bisectors of $\angle E$, $\angle F$ & $\angle G$ of $\triangle EFG$ meet the circumcircle at H , I & J. If $\angle E = 52°$, find $\angle H$



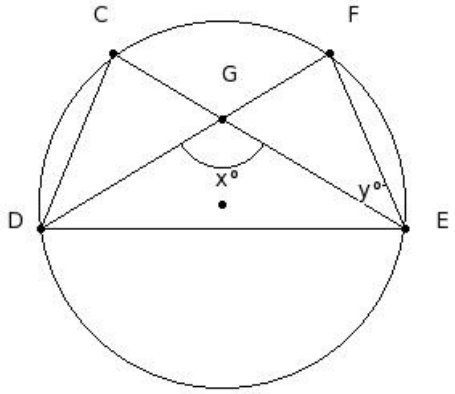
(i) 79° (ii) 74° (iii) 64° (iv) 69° (v) 94°

58. In the given figure, O is the centre of the circle. Given $\angle IOJ = 56°$ & $\angle HKJ = 57°$, find $\angle HOI$



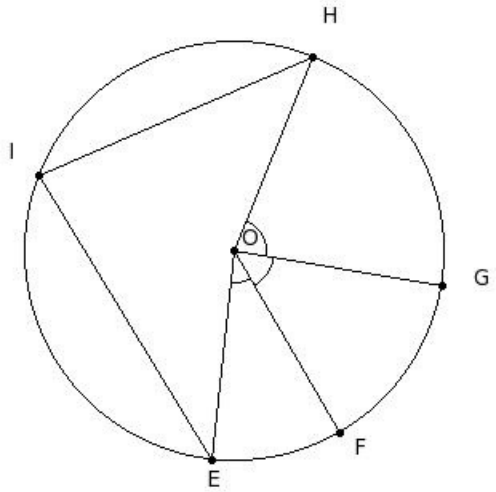
(i) 63° (ii) 73° (iii) 88° (iv) 58° (v) 68°

59. In the given figure, chords CE & DF meet at G. Given x = 118° and y = 36°, find ∠DCE



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

60. In the given figure, O is the centre of the circle. Given ∠EOF = 36°, ∠GOH = 78° and ∠FOG = 50°, find ∠EIH



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

Assignment Key

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