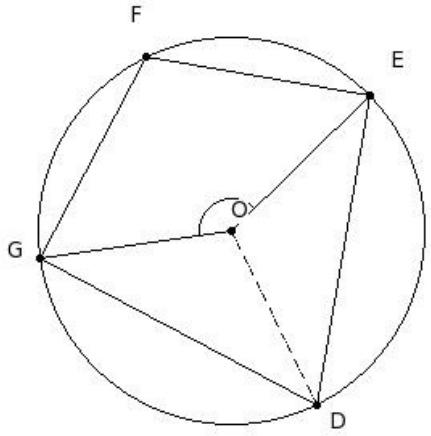
EduSahara™ Assignment

Name : Cyclic Quadrilateral

Chapter : Circles

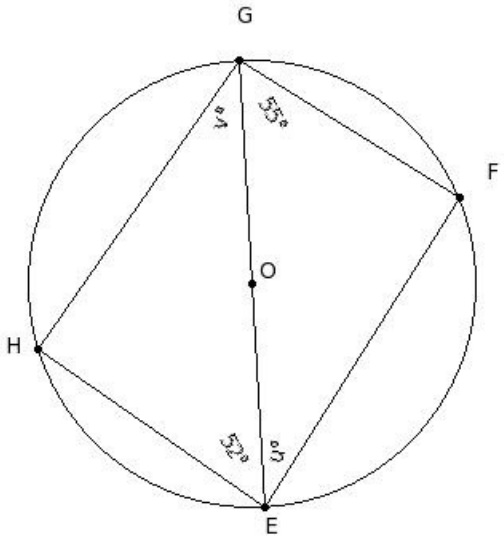
Grade : SSC Grade IX

1. O is the centre of the circle. If ∠EOG = 144°, find ∠D



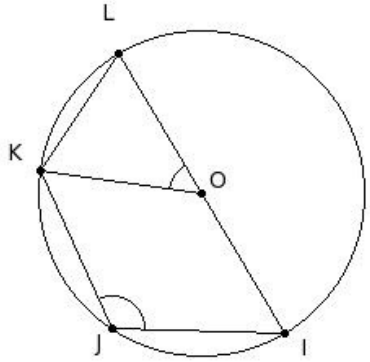
(i) 77° (ii) 82° (iii) 102° (iv) 87° (v) 72°

2. O is the centre of the circle. If ∠EGF = 55° and ∠GEH = 52°, find u°, v°



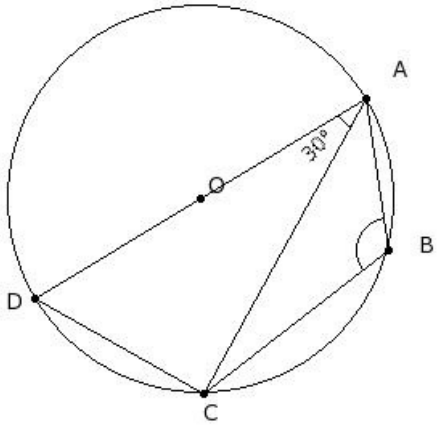
(i) 68°, 55° (ii) 28°, 35° (iii) 35°, 38° (iv) 48°, 45° (v) 38°, 35°

3. O is the centre of the circle. If ∠IJK = 115.5°, find ∠KOL



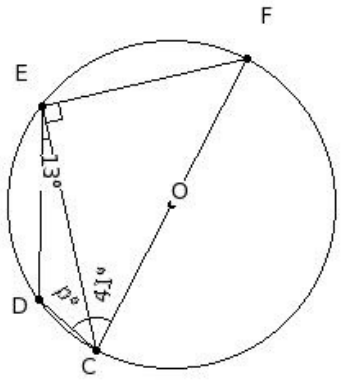
(i) 51° (ii) 61° (iii) 56° (iv) 66° (v) 81°

4. O is the centre of the circle and ∠DAC = 30°, find ∠ABC



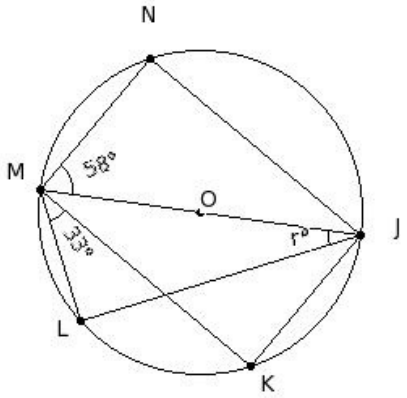
(i) 135° (ii) 150° (iii) 125° (iv) 130° (v) 120°

5. O is the centre of the circle. If ∠ECF = 41° and ∠CED = 13°, find ∠DCE



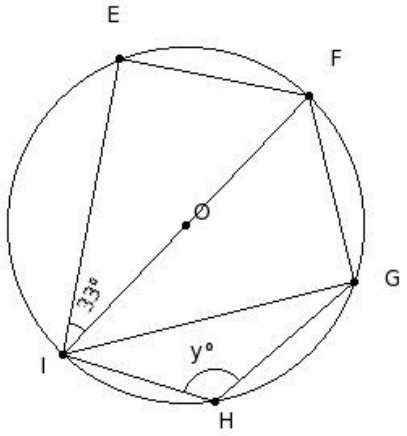
(i) 45° (ii) 40° (iii) 35° (iv) 65° (v) 50°

6. In the given figure, O is the centre of the circle and JM is a diameter. If ∠JMN = 58° and ∠KML = 33°, find ∠MJL



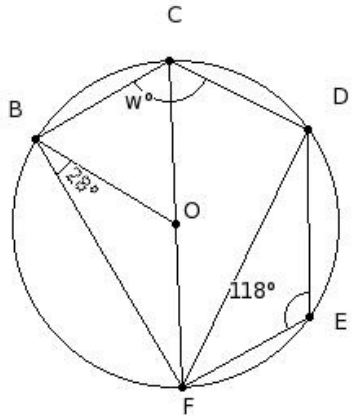
(i) 25° (ii) 35° (iii) 30° (iv) 55° (v) 40°

7. In the given figure, O is the centre of the circle and chord EF is equal to chord FG and FI is a diameter. If ∠EIF = 33°, find ∠IHG



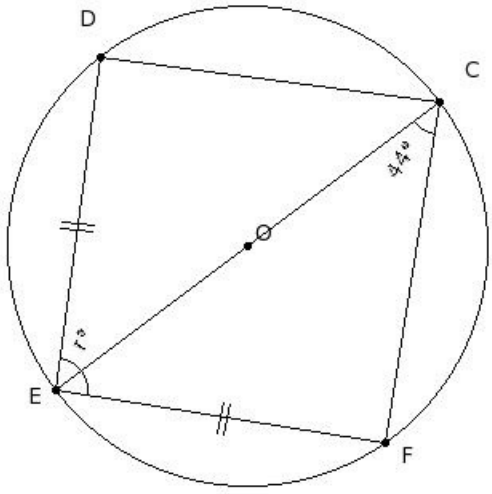
(i) 138° (ii) 153° (iii) 133° (iv) 128° (v) 123°

8. In the given figure, O is the centre of the circle and chord BC is equal to chord CD and CF is a diameter. If ∠FBO = 28° and ∠DEF = 118°, find ∠BCD



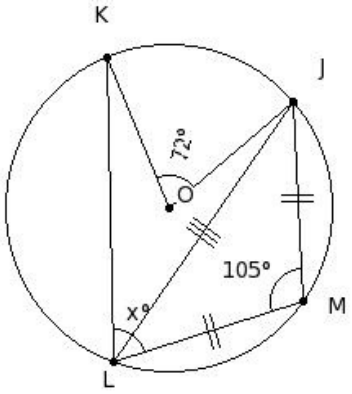
(i) 124° (ii) 129° (iii) 134° (iv) 154° (v) 139°

9. In the given figure, O is the centre of the circle , chord DE is equal to chord EF and CE is a diameter. If ∠FCE = 44° find ∠DEF



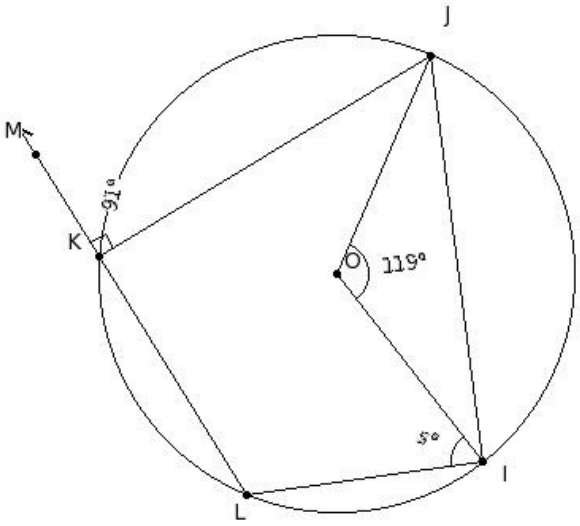
(i) 107° (ii) 92° (iii) 97° (iv) 102° (v) 122°

10. In the given figure, O is the centre of the circle , chord JM is equal to chord ML. If ∠JOK = 72° and ∠JML = 105°, find ∠KLM



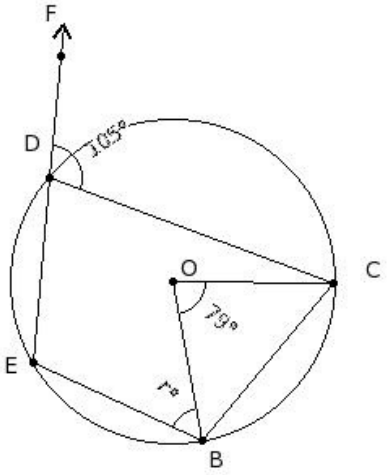
(i) 88.5° (ii) 83.5° (iii) 73.5° (iv) 78.5° (v) 103.5°

11. In the given figure, O is the centre of the circle. If ∠IOJ = 119° and ∠JKM = 91°, find ∠LIO



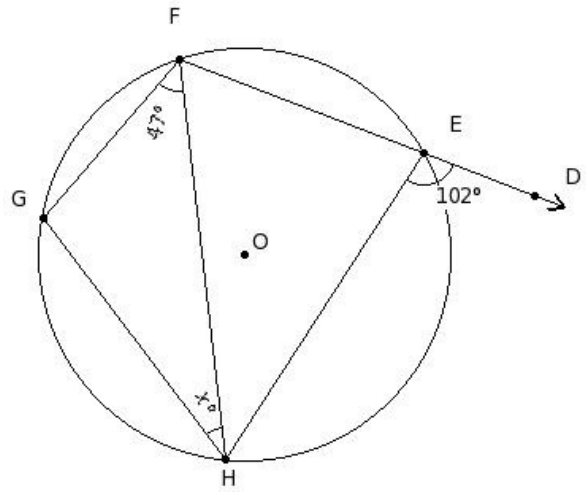
(i) 70.5° (ii) 90.5° (iii) 60.5° (iv) 75.5° (v) 65.5°

12. In the given figure, O is the centre of the circle. If ∠BOC = 79° and ∠CDF = 105°, find ∠EBO



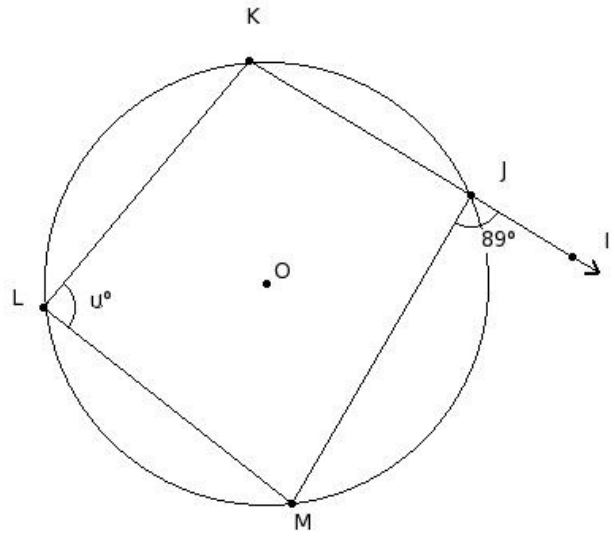
(i) 64.5° (ii) 69.5° (iii) 54.5° (iv) 59.5° (v) 84.5°

13. In the given figure, O is the centre of the circle. If ∠HFG = 47° and ∠DEH = 102°, find ∠FHG



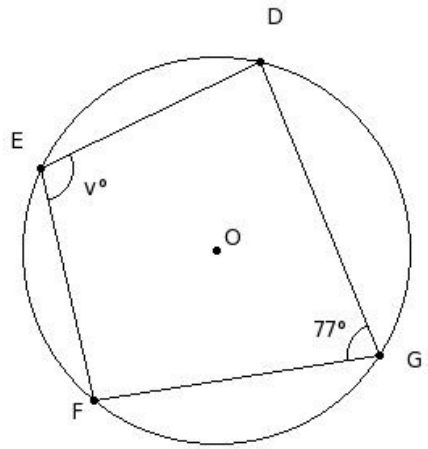
(i) 46° (ii) 31° (iii) 61° (iv) 41° (v) 36°

14. In the given figure, O is the centre of the circle. If ∠IJM = 89°, find ∠KLM



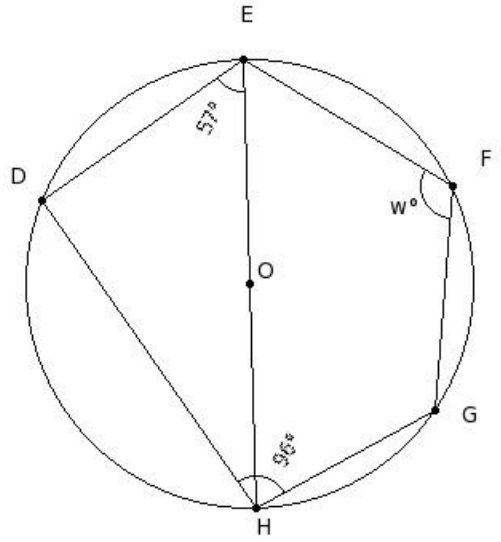
(i) 119° (ii) 104° (iii) 89° (iv) 94° (v) 99°

15. In the given figure, O is the centre of the circle. If ∠FGD = 77°, find ∠DEF



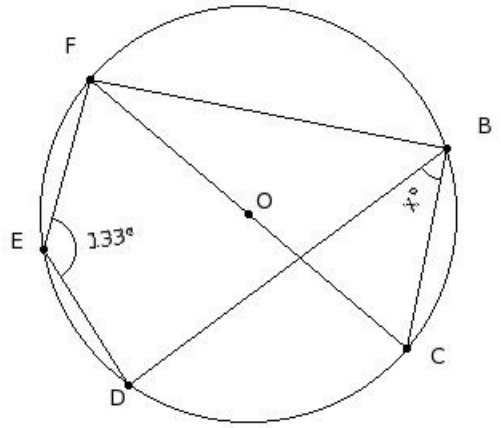
(i) 133° (ii) 108° (iii) 113° (iv) 118° (v) 103°

16. In the given figure, O is the centre of the circle and EH is a diameter. If ∠GHD = 96° and ∠DEH = 57°, find ∠EFG



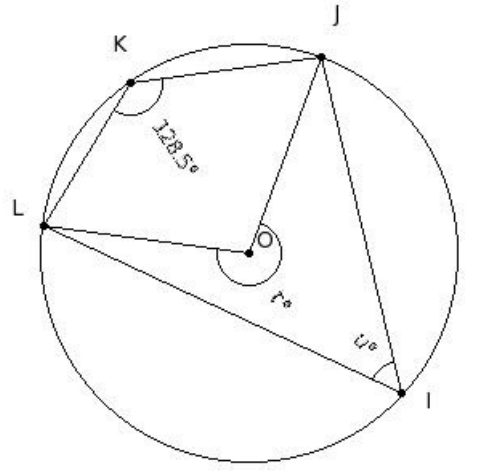
(i) 117° (ii) 122° (iii) 127° (iv) 132° (v) 147°

17. In the given figure, O is the centre of the circle and CF is a diameter. If ∠DEF = 133°, find ∠DBC



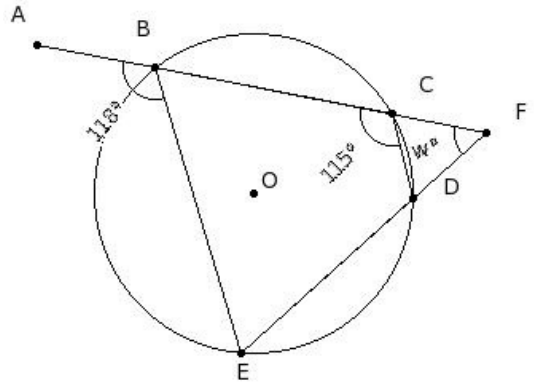
(i) 48° (ii) 58° (iii) 43° (iv) 53° (v) 73°

18. In the given figure, O is the centre of the circle. If ∠JKL = 128.5°, find ∠LOJ + ∠JIL



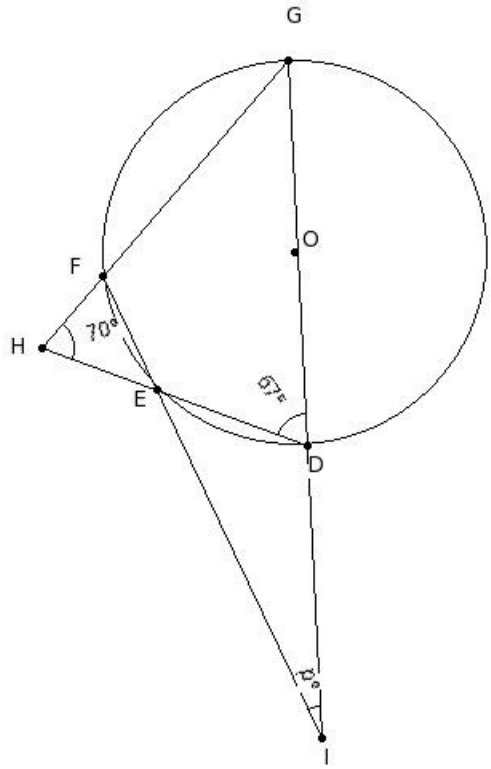
(i) 338.5° (ii) 313.5° (iii) 308.5° (iv) 318.5° (v) 323.5°

19. In the given figure, O is the centre of the circle. If ∠ABE = 118° and ∠BCD = 115°, find ∠CFD



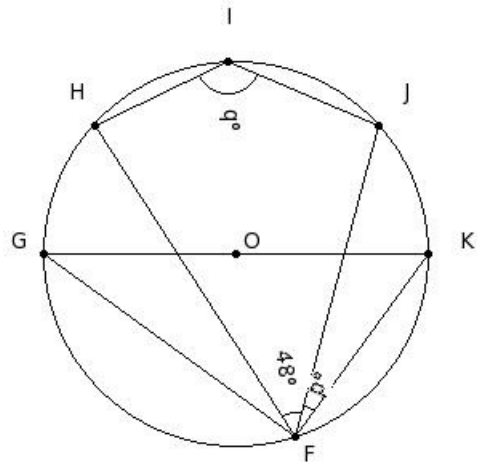
(i) 53° (ii) 63° (iii) 68° (iv) 58° (v) 83°

20. In the given figure, O is the centre of the circle . If ∠EHF = 70° and ∠EDG = 67°, find ∠DIE



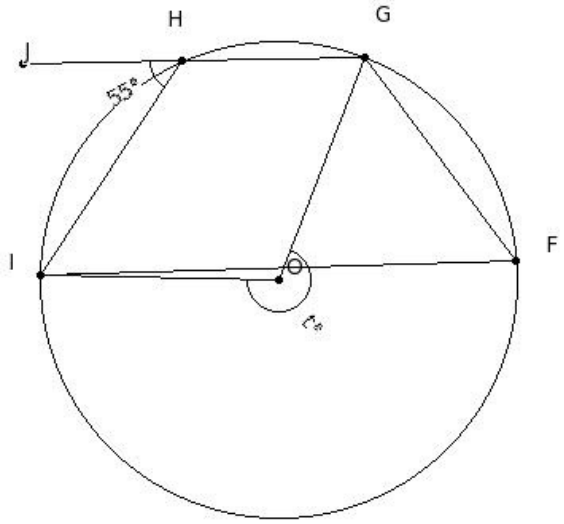
(i) 39° (ii) 29° (iii) 54° (iv) 24° (v) 34°

21. In the given figure, O is the centre and GK is a diameter of the circle and chord GH is equal to chord JK. If ∠HFJ = 48°, find ∠JFK + ∠HIJ



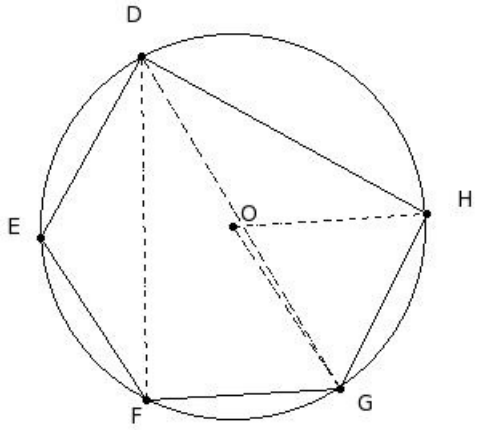
(i) 153° (ii) 183° (iii) 158° (iv) 163° (v) 168°

22. In the given figure, O is the centre of the circle. If ∠JHI = 55°, find reflex ∠IOG



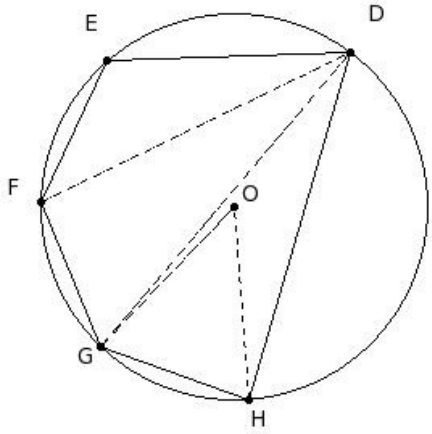
(i) 250° (ii) 280° (iii) 265° (iv) 255° (v) 260°

23. In the given figure, a pentagon is inscribed in a circle with centre O. Given EF = FG = GH and ∠EFG = 120°. Find ∠EDF



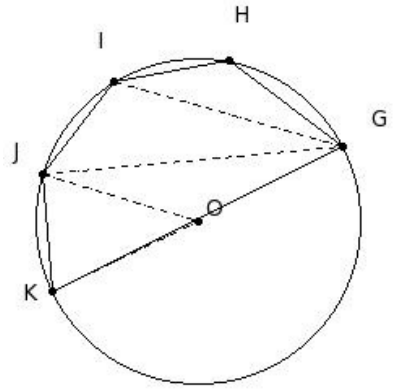
(i) 35° (ii) 40° (iii) 30° (iv) 60° (v) 45°

24. In the given figure, a pentagon is inscribed in a circle with centre O. Given EF = FG = GH and ∠EFG = 132°. Find ∠EDH



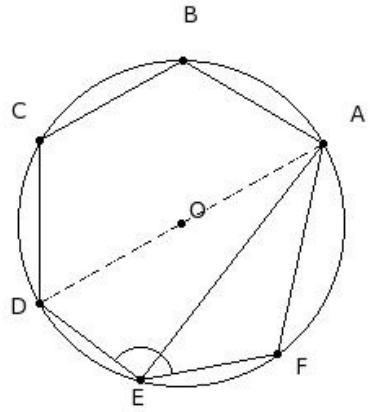
(i) 102° (ii) 87° (iii) 82° (iv) 77° (v) 72°

25. In the given figure, a pentagon is inscribed in a circle with centre O. Given HI = IJ = JK and ∠HIJ = 138°. Find ∠JOK



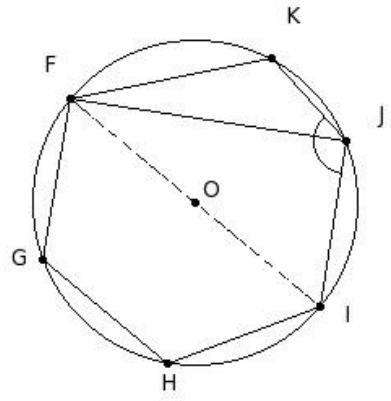
(i) 52° (ii) 57° (iii) 42° (iv) 72° (v) 47°

26. In the given figure, a hexagon is inscribed in a circle with centre O. Given AB = BC = CD and ∠DEF = 132.05°. Find ∠AEF



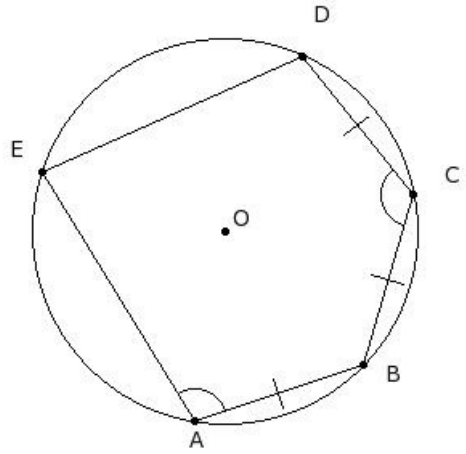
(i) 72.05° (ii) 47.05° (iii) 42.05° (iv) 52.05° (v) 57.05°

27. In the given figure, a hexagon is inscribed in a circle with centre O. Given FG = GH = HI and ∠IJK = 129.04°. Find ∠KFG



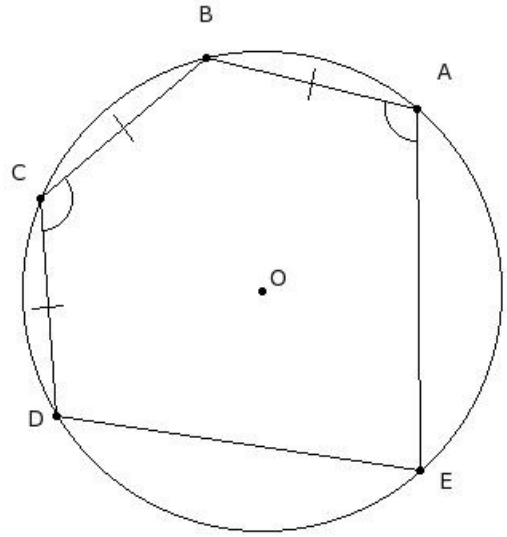
(i) 110.96° (ii) 115.96° (iii) 140.96° (iv) 120.96° (v) 125.96°

28. In the given figure, a pentagon is inscribed in a circle with centre O. Given AB = BC = CD , ∠BCD = 110° and ∠EAB = 103°. Find ∠ABC



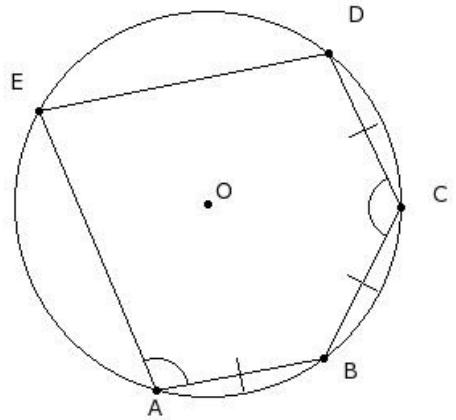
(i) 110° (ii) 120° (iii) 140° (iv) 115° (v) 125°

29. In the given figure, a pentagon is inscribed in a circle with centre O. Given AB = BC = CD , ∠BCD = 108° and ∠EAB = 104°. Find ∠CDE



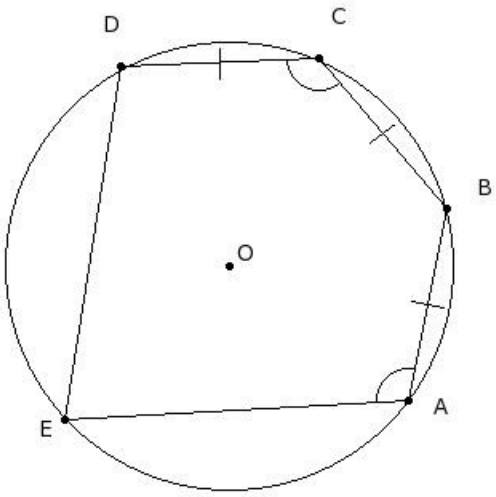
(i) 112° (ii) 142° (iii) 117° (iv) 122° (v) 127°

30. In the given figure, a pentagon is inscribed in a circle with centre O. Given AB = BC = CD , ∠BCD = 105° and ∠EAB = 102°. Find ∠AED



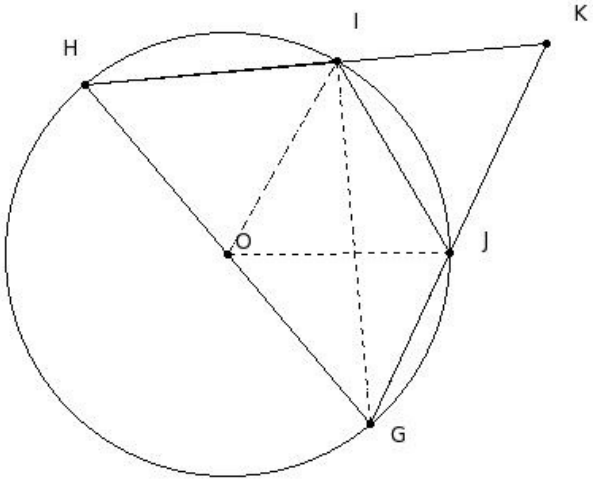
(i) 117.5° (ii) 122.5° (iii) 142.5° (iv) 112.5° (v) 127.5°

31. In the given figure, a pentagon is inscribed in a circle with centre O. Given AB = BC = CD , ∠BCD = 104° and ∠EAB = 104°. Find ∠EAD



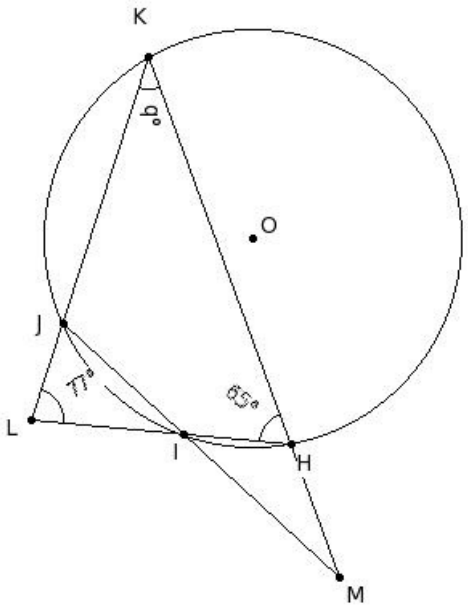
(i) 33° (ii) 38° (iii) 43° (iv) 58° (v) 28°

32. In the given figure, O is the centre of the circle. GH is a diameter of the circle and IJ is equal to radius. Find ∠GKH



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

33. In the given figure, O is the centre of the circle. If ∠ILJ = 77° and ∠IHK = 65°, find ∠HKJ



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

34. Which of the following statements are true?

a) If a parallelogram is cyclic, it is a rectangle.
b) If a trapezium is cyclic, it is a rectangle.
c) If a kite is cyclic, it is a square.
d) If a rhombus is cyclic, it is a square.
e) A cyclic quadrilateral is a regular polygon.

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

35. Which of the following are cyclic quadrilaterals?

a) triangle
b) trapezium
c) square
d) rhombus
e) parallelogram
f) rectangle

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

36. Which of the following statements are true?

a) If a circle can be inscribed in a quadrilateral, it must be a kite.
b) If a circle can be inscribed in a quadrilateral, the sum of the lengths of a pair of opposite sides is equal to the other pair.
c) If a circle can be inscribed in a quadrilateral, then it must be a square.
d) It is always possible to inscribe a circle in a regular polygon.
e) It is always possible to inscribe a circle in a quadrilateral.

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

37. Which of the following statements are true?

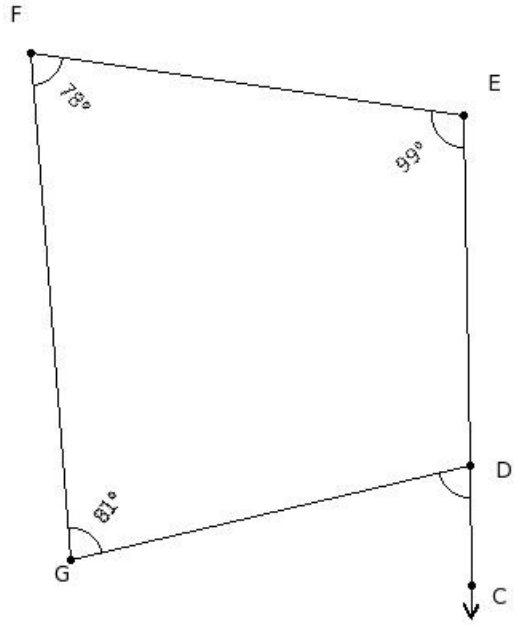
a) Angles in the opposite segments are supplementary.
b) Angles subtended by equal length arcs in two circles are equal.
c) Angles in the opposite segments are complementary.
d) Angles in the same segment are equal.

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

38. The opposite angles in a cyclic quadrilateral are

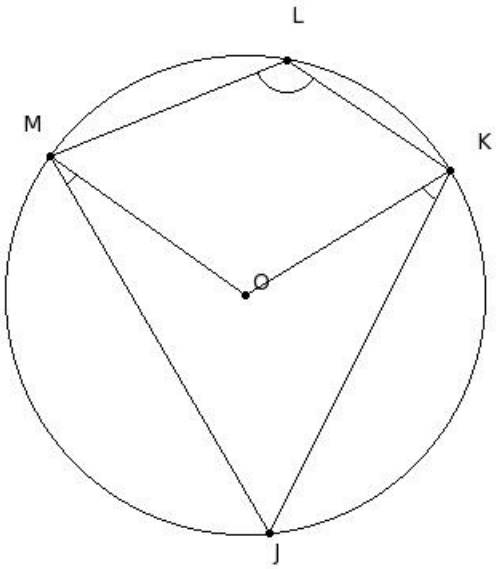
(i) supplementary (ii) equal (iii) linear pair (iv) complementary

39. In the given figure, DEFG is cyclic quadrilateral. If ∠EFG = 78°, find ∠CDG



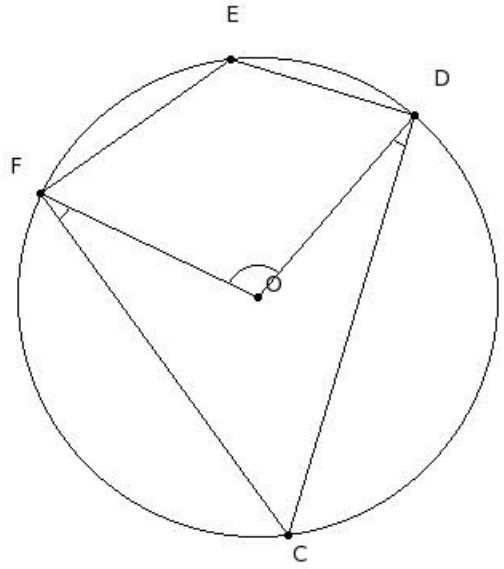
(i) 108° (ii) 78° (iii) 93° (iv) 88° (v) 83°

40. In the given figure, O is the centre of the circle. If ∠JKO = 32° and ∠OMJ = 24°, find ∠KLM



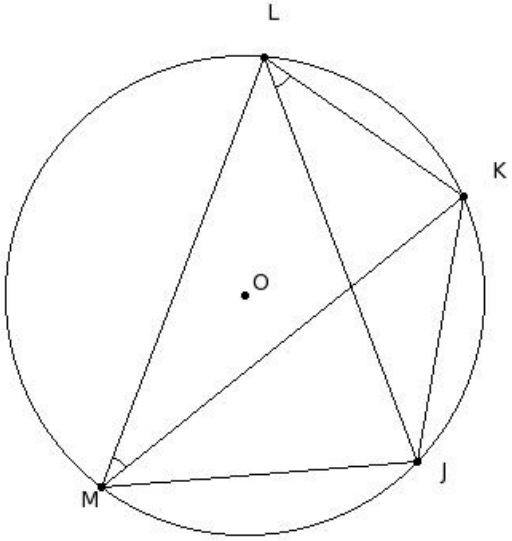
(i) 129° (ii) 124° (iii) 139° (iv) 134° (v) 154°

41. In the given figure, O is the centre of the circle. If ∠CDO = 24° and ∠OFC = 29°, find ∠DOF



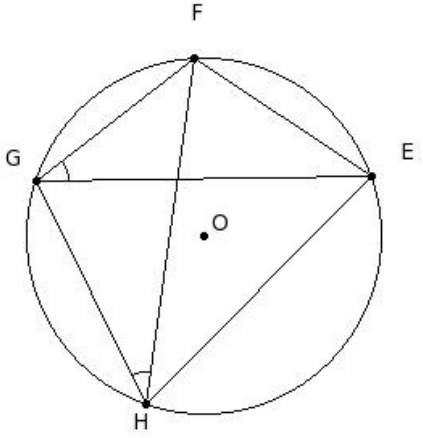
(i) 136° (ii) 106° (iii) 111° (iv) 121° (v) 116°

42. In the given figure, JKLM is a cyclic quadrilateral. If ∠JLK = 34° and ∠LMK = 31°, find ∠JKL



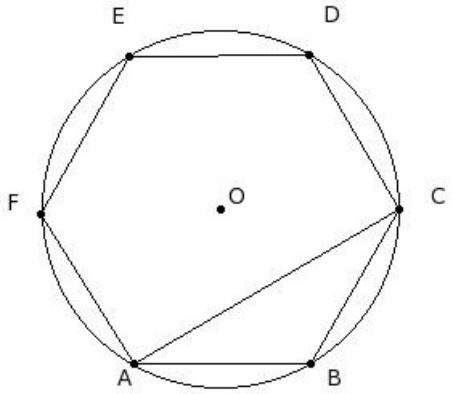
(i) 115° (ii) 120° (iii) 125° (iv) 145° (v) 130°

43. In the given figure, EFGH is a cyclic quadrilateral. If ∠EGF = 37° and ∠GHF = 34°, find ∠EHG



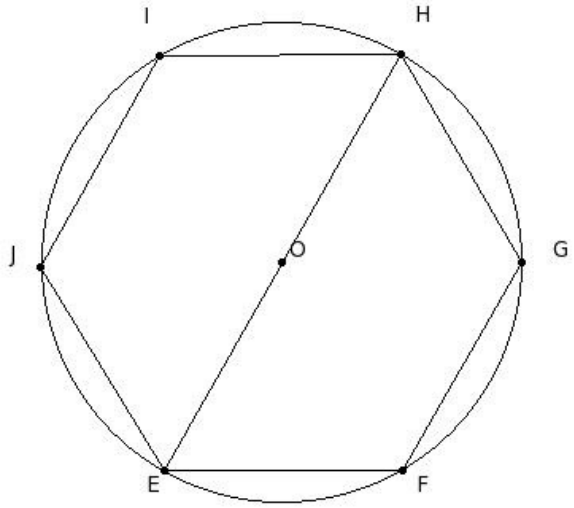
(i) 101° (ii) 76° (iii) 71° (iv) 86° (v) 81°

44. In the given figure, ABCDEF is a regular hexagon. Find ∠ACB



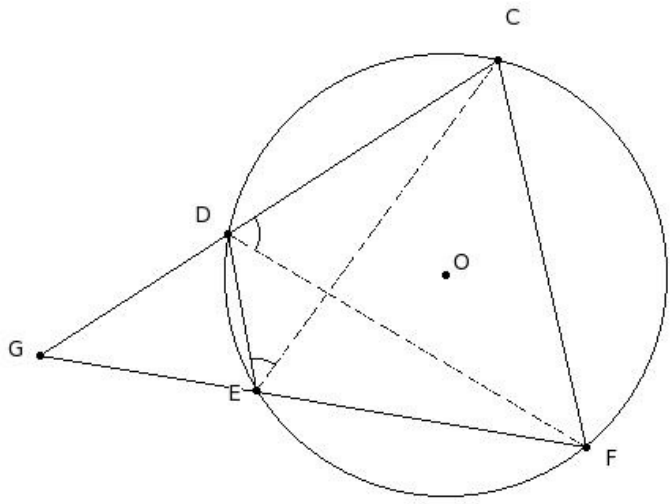
(i) 45° (ii) 35° (iii) 30° (iv) 60° (v) 40°

45. In the given figure, EFGHIJ is a regular hexagon. Find ∠EHG



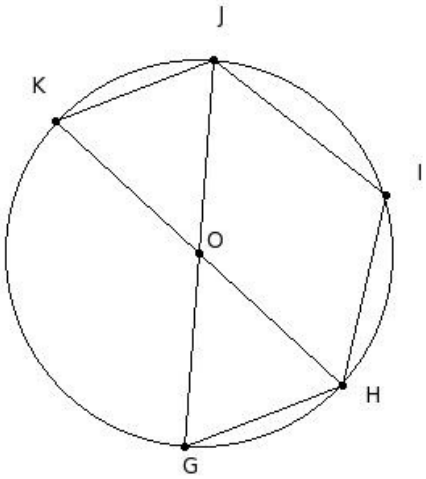
(i) 75° (ii) 60° (iii) 65° (iv) 70° (v) 90°

46. In the given figure, CDEF is a cyclic quadrilateral. If ∠CDF = 63° and ∠DEC = 47°, find ∠FCD



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

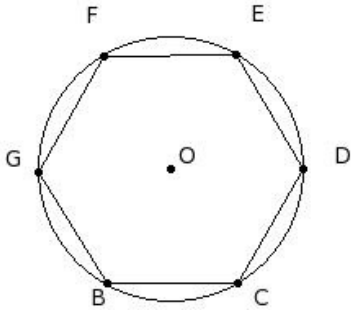
47. In the given figure, GH , HI , IJ and JK are chords and GJ , HK are diameters passing through the centre O. If ∠GOH = 52°. Find ∠HIJ



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

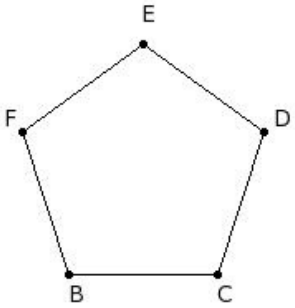
48. In the given figure, BCDEFG is a regular hexagon inscribed in a circle with centre O. Which of the following are true?

a) ∠CFD = 30°
b) ∠GED = 90°
c) ∠COE = 120°
d) ∠BDC = 60°
e) ∠BOG = 60°



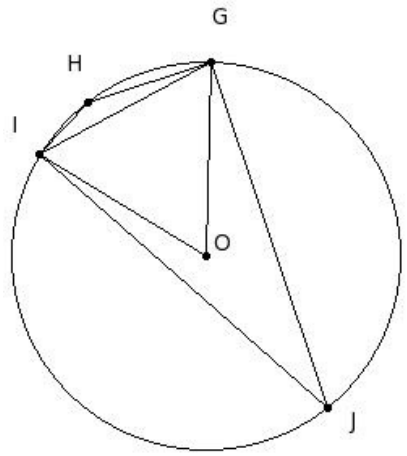
(i) {d,a} (ii) {a,b,c,e} (iii) {d,c} (iv) {d,e,a} (v) {d,b}

49. In the given figure, BCDEF is a regular pentagon . Find ∠BFD



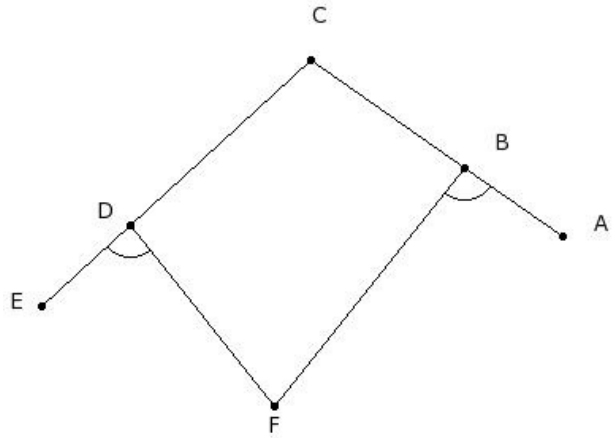
(i) 82° (ii) 102° (iii) 77° (iv) 87° (v) 72°

50. In the given figure, GI is a chord which is equal to the radius of the circle. Find ∠J and ∠H



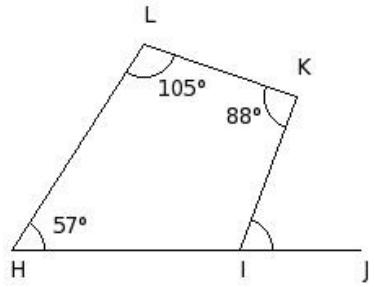
(i) 50° & 130° (ii) 45° & 135° (iii) 40° & 140° (iv) 30° & 150° (v) 60° & 120°

51. In the given figure, BCDF is a cyclic quadrilateral where CD and CB are produced to E and A respectively. If ∠ABF = 94°, find ∠EDF



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

52. In the given figure, ∠H = 57° , ∠K = 88° and ∠L = 105°, find ∠KIJ



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

53. Which of the following statements are true?

a) A cyclic trapezium is a rectangle.
b) A cyclic rhombus is a square.
c) A cyclic parallelogram is a rectangle.
d) A cyclic parallelogram is a rhombus.
e) A cyclic kite is a square.

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

54. Which of the following statements are true?

a) A quadrilateral in which the diagonals are equal and bisect each other is cyclic.
b) Either pair of opposite angles of a cyclic quadrilateral are supplementary.
c) All parallelograms are cyclic.
d) An isosceles trapezium is cyclic.
e) The exterior angle of a quadrilateral and its interior opposite angle are supplementary.

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

55. Which of the following are not cyclic quadrilaterals?

a) square
b) rhombus
c) rectangle
d) kite
e) isosceles trapezium

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

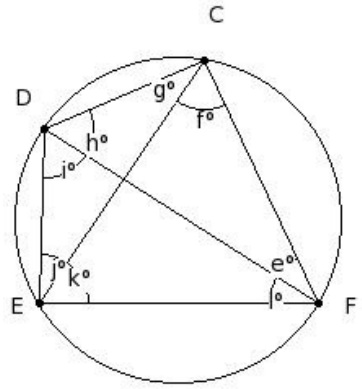
56. If JKLM is a cyclic quadrilateral and $\angle J - \angle L = 46°$, then $\angle L$

(i) 72° (ii) 67° (iii) 97° (iv) 82° (v) 77°

57. If CDEF is a cyclic parallelogram, then $\angle F$

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

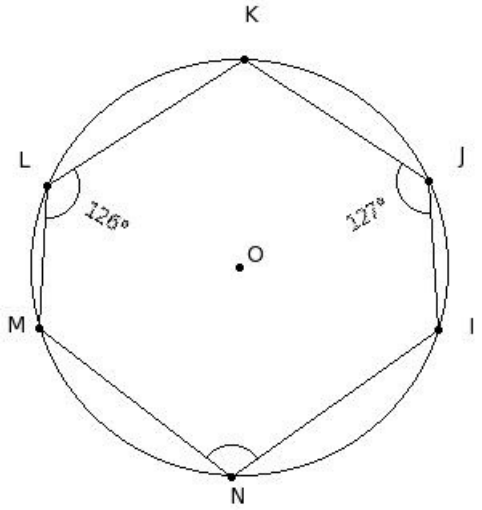
58. In the given figure, which of the following angle pairs are equal?



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

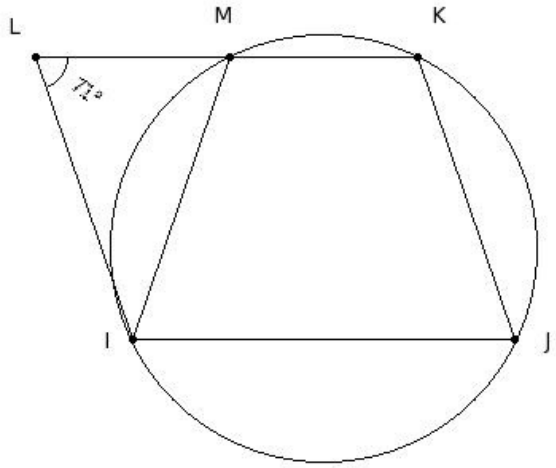
(v) {(k,i),(f,g),(l,j),(h,e)}

59. IJKLMN is a hexagon inscribed in a circle. Given ∠IJK = 127° & ∠KLM = 126°, find ∠MNI



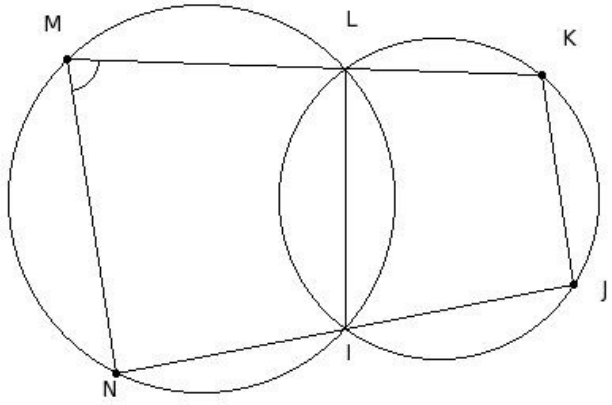
(i) 107° (ii) 117° (iii) 112° (iv) 122° (v) 137°

60. In the given figure, IJKL is a parallelogram. The circumcircle of △IJK cuts KL at M. Given ∠ILM = 71°, find ∠LIM



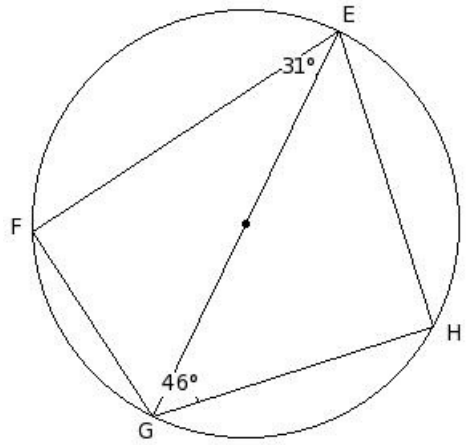
(i) 48° (ii) 53° (iii) 68° (iv) 43° (v) 38°

61. In the given figure, MK and NJ are two lines passing through the points of intersection of the two circles at L and I. If ∠NML = 79° , find ∠LKJ



(i) 106° (ii) 116° (iii) 111° (iv) 131° (v) 101°

62. In the given figure, find the angles of the quadrilateral.

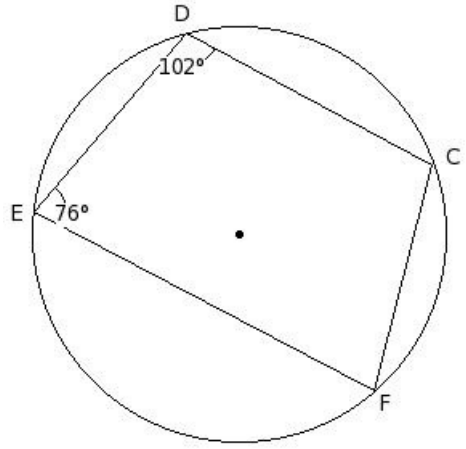


(i) $E=76°, F=90°, G=104°, H=90°$ (ii) $E=75°, F=90°, G=105°, H=90°$

(iii) $E=77°, F=90°, G=103°, H=90°$ (iv) $E=73°, F=90°, G=107°, H=90°$

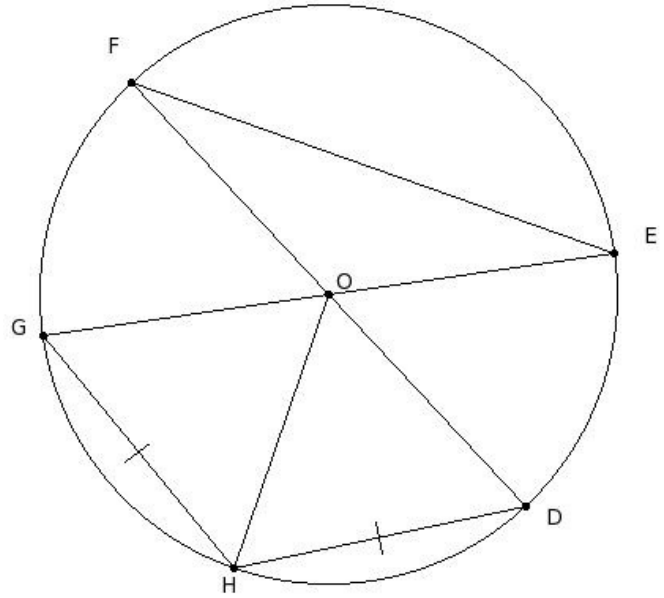
(v) $E=74°, F=90°, G=106°, H=90°$

63. In the given figure, find the remaining angles of the quadrilateral.



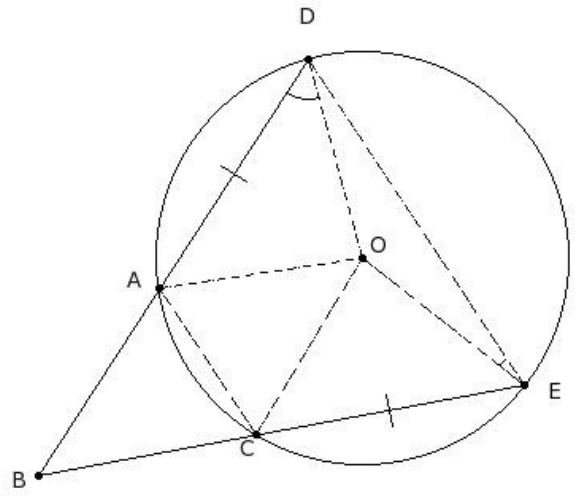
(i) $C=102°, F=76°$ (ii) $C=106°, F=80°$ (iii) $C=104°, F=78°$ (iv) $C=103°, F=77°$ (v) $C=105°, F=79°$

64. In the given figure, GH & HD are equal length chords, DF and EG are diameters. Given ∠HDO = 59° find, ∠EFO



(i) 28° (ii) 33° (iii) 43° (iv) 58° (v) 38°

65. In the given figure, ∠OED = 18° & ∠CBA = 48°, find ∠ODA



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

Assignment Key

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