

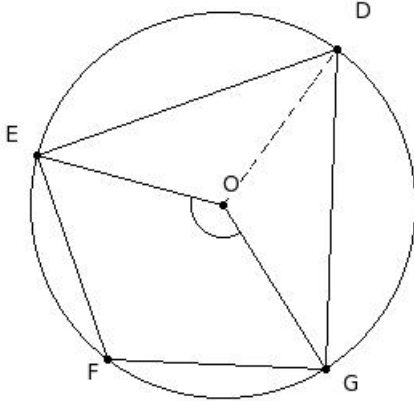
EduSahara™ Learning Center Assignment

Grade : Class IX, CBSE

Chapter : Circles

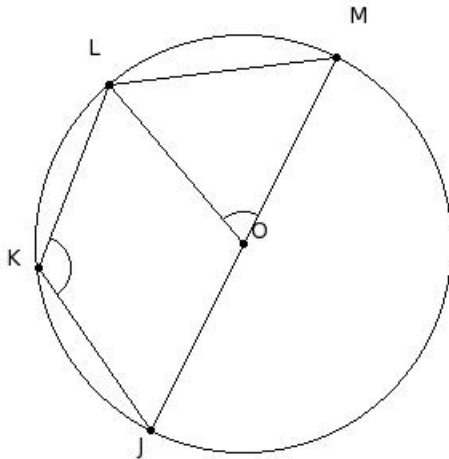
Name : Cyclic Quadrilateral

1. O is the centre of the circle. If $\angle EOG = 137^\circ$, find $\angle D$



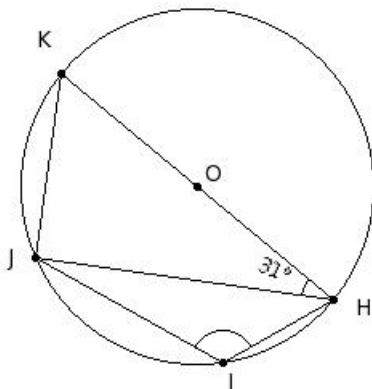
- (i) 83.5° (ii) 78.5° (iii) 73.5° (iv) 98.5° (v) 68.5°

2. O is the centre of the circle. If $\angle JKL = 123.5^\circ$, find $\angle LOM$



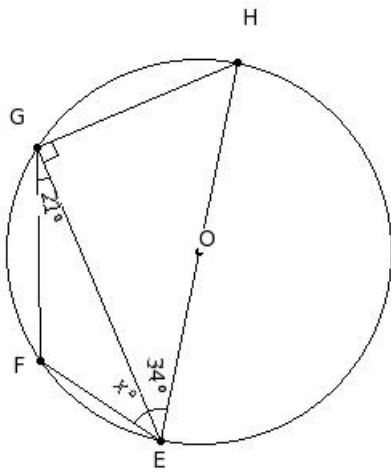
- (i) 72° (ii) 67° (iii) 82° (iv) 97° (v) 77°

3. O is the centre of the circle and $\angle KHJ = 31^\circ$, find $\angle HIJ$



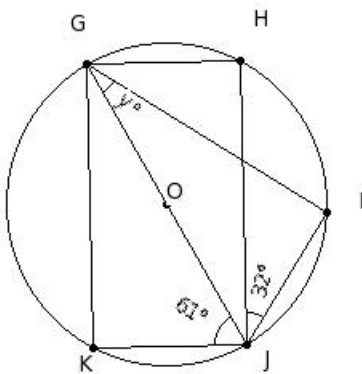
- (i) 126° (ii) 151° (iii) 136° (iv) 121° (v) 131°

4. O is the centre of the circle. If $\angle GEH = 34^\circ$ and $\angle EGF = 21^\circ$, find $\angle FEG$



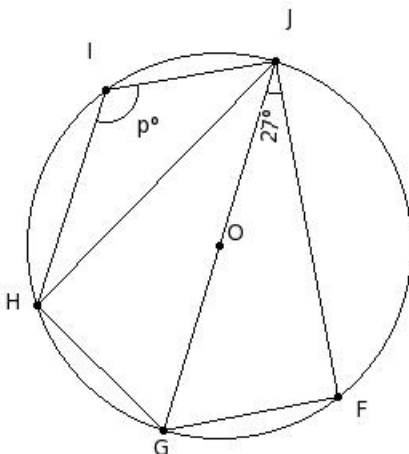
- (i) 45° (ii) 65° (iii) 40° (iv) 50° (v) 35°

5. In the given figure, O is the centre of the circle and GJ is a diameter. If $\angle GJK = 61^\circ$ and $\angle HJI = 32^\circ$, find $\angle JGI$



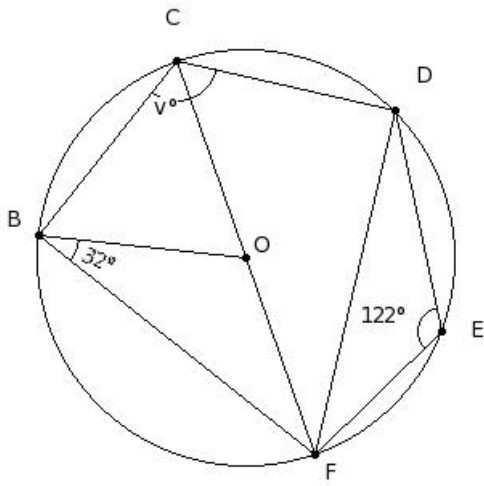
- (i) 29° (ii) 39° (iii) 34° (iv) 59° (v) 44°

6. In the given figure, O is the centre of the circle and chord FG is equal to chord GH and GJ is a diameter. If $\angle FJG = 27^\circ$, find $\angle JIH$



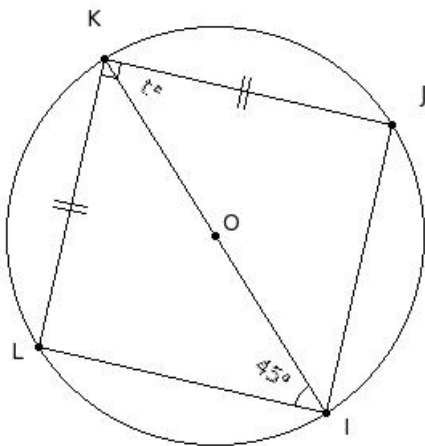
- (i) 127° (ii) 132° (iii) 147° (iv) 117° (v) 122°

7. 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 $\angle FBO = 32^\circ$ and $\angle DEF = 122^\circ$, find $\angle BCD$



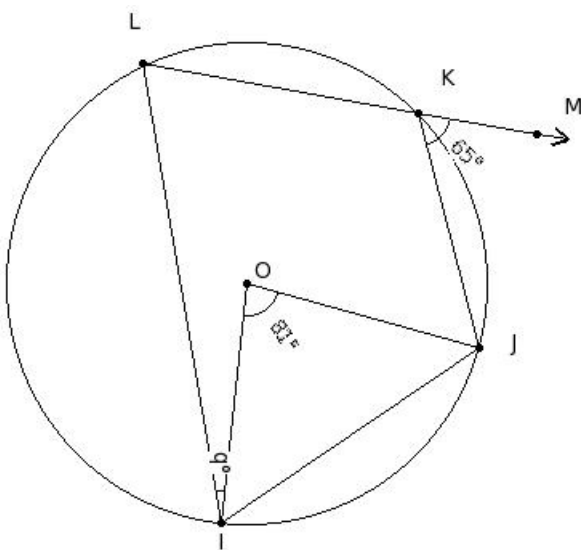
- (i) 116° (ii) 131° (iii) 126° (iv) 121° (v) 146°

8. In the given figure, O is the centre of the circle, chord JK is equal to chord KL and IK is a diameter. If $\angle LIK = 45^\circ$ find $\angle JKL$



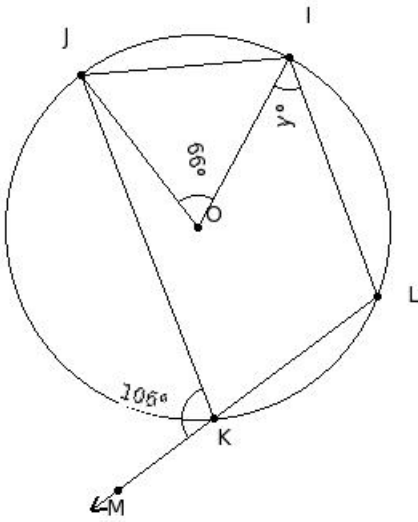
- (i) 95° (ii) 90° (iii) 100° (iv) 105° (v) 120°

9. In the given figure, O is the centre of the circle. If $\angle IOJ = 81^\circ$ and $\angle JKM = 65^\circ$, find $\angle LIO$



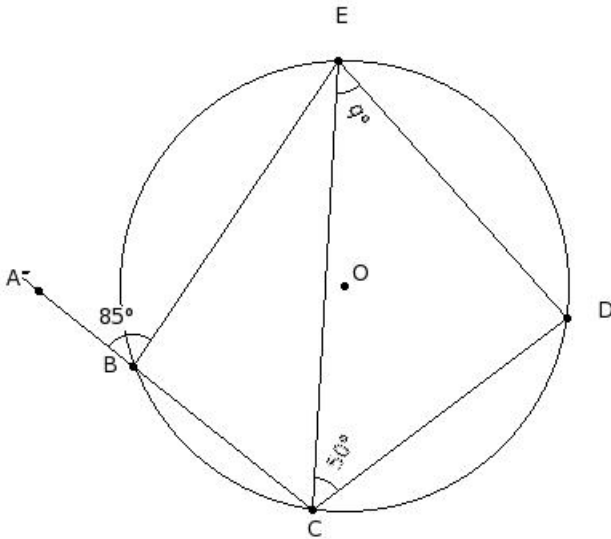
- (i) 25.5° (ii) 15.5° (iii) 20.5° (iv) 30.5° (v) 45.5°

10. In the given figure, O is the centre of the circle. If $\angle IOJ = 66^\circ$ and $\angle JKM = 106^\circ$, find $\angle LIO$



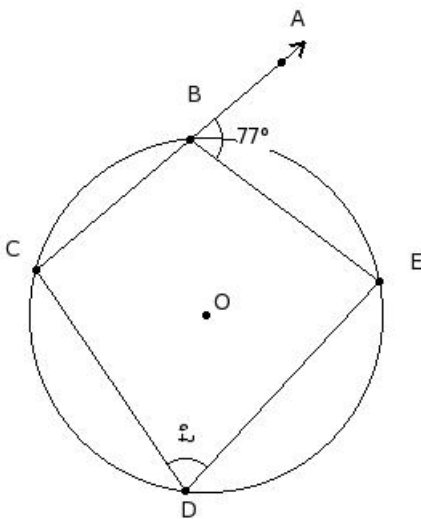
- (i) 59° (ii) 79° (iii) 64° (iv) 54° (v) 49°

11. In the given figure, O is the centre of the circle. If $\angle ECD = 50^\circ$ and $\angle ABE = 85^\circ$, find $\angle CED$



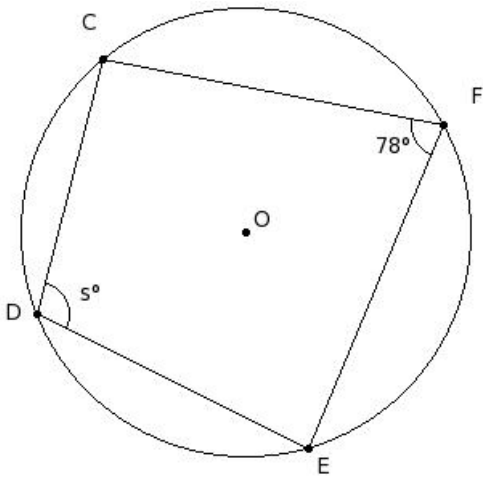
- (i) 45° (ii) 55° (iii) 50° (iv) 60° (v) 75°

12. In the given figure, O is the centre of the circle. If $\angle ABE = 77^\circ$, find $\angle CDE$



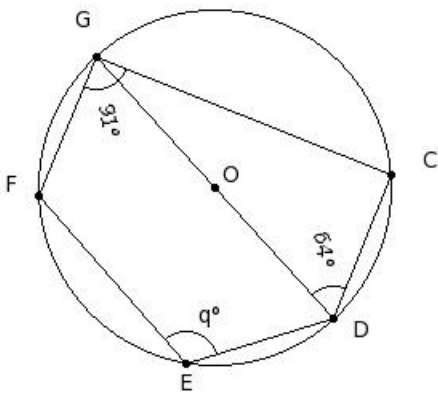
- (i) 77° (ii) 82° (iii) 107° (iv) 92° (v) 87°

13. In the given figure, O is the centre of the circle. If $\angle EFC = 78^\circ$, find $\angle CDE$



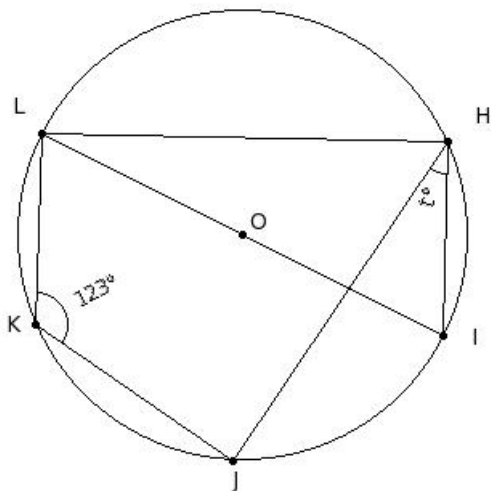
- (i) 132° (ii) 117° (iii) 107° (iv) 112° (v) 102°

14. In the given figure, O is the centre of the circle and DG is a diameter. If $\angle FGC = 91^\circ$ and $\angle CDG = 64^\circ$, find $\angle DEF$



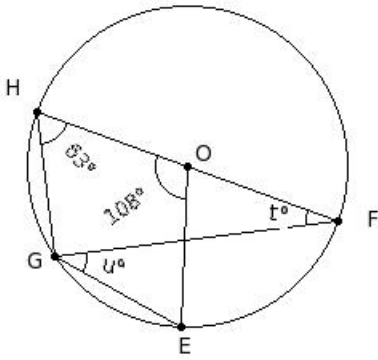
- (i) 120° (ii) 130° (iii) 125° (iv) 145° (v) 115°

15. In the given figure, O is the centre of the circle and IL is a diameter. If $\angle JKL = 123^\circ$, find $\angle JHI$



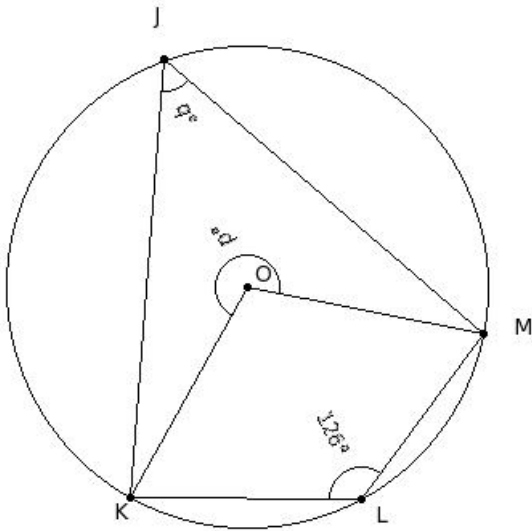
- (i) 43° (ii) 38° (iii) 48° (iv) 33° (v) 63°

16. In the given figure, O is the centre of the circle and FH is a diameter. If $\angle EOH = 108^\circ$ and $\angle OHG = 63^\circ$, find $\angle FGE + \angle GFH$



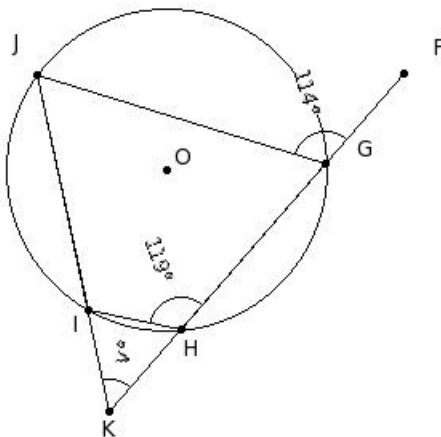
- (i) 78° (ii) 93° (iii) 63° (iv) 68° (v) 73°

17. In the given figure, O is the centre of the circle. If $\angle KLM = 126^\circ$, find $\angle MOK + \angle KJM$



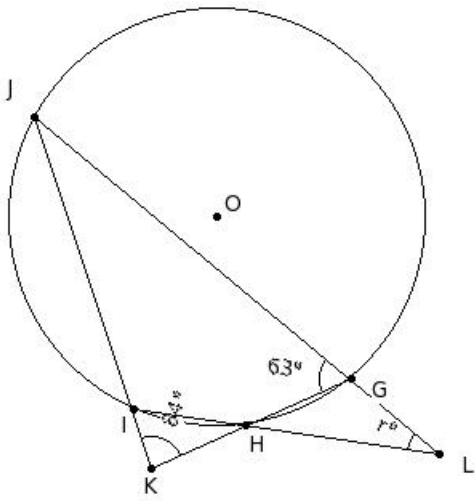
- (i) 336° (ii) 306° (iii) 311° (iv) 321° (v) 316°

18. In the given figure, O is the centre of the circle. If $\angle FGJ = 114^\circ$ and $\angle GHI = 119^\circ$, find $\angle HKI$



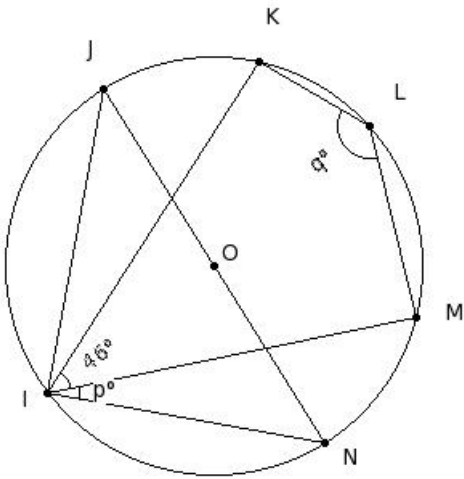
- (i) 53° (ii) 83° (iii) 63° (iv) 68° (v) 58°

19. In the given figure, O is the centre of the circle. If $\angle HKI = 84^\circ$ and $\angle HGI = 63^\circ$, find $\angle GLH$



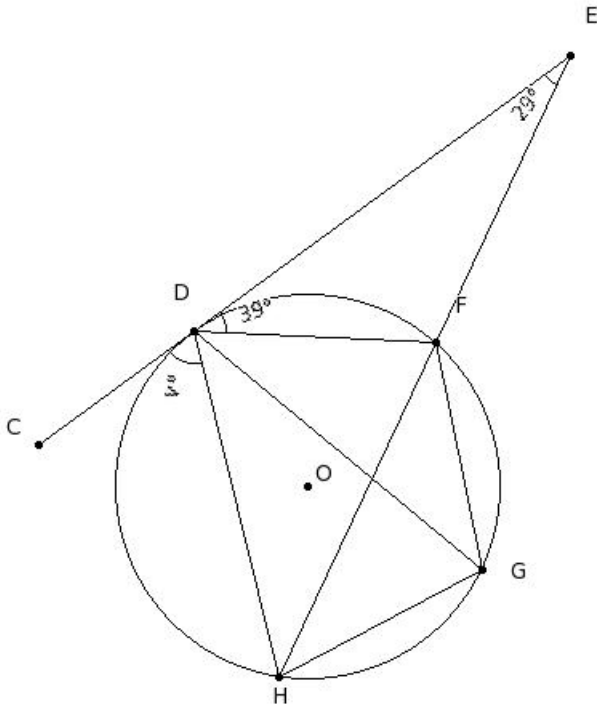
- (i) 35° (ii) 30° (iii) 60° (iv) 45° (v) 40°

20. In the given figure, O is the centre and JN is a diameter of the circle and chord JK is equal to chord MN. If $\angle KIM = 46^\circ$, find $\angle MIN + \angle KLM$



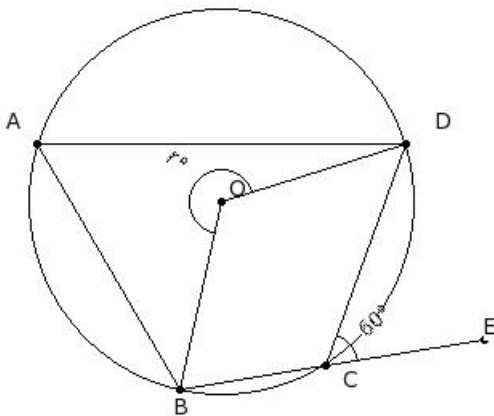
- (i) 171° (ii) 186° (iii) 156° (iv) 166° (v) 161°

21. In the given figure, O is the centre of the circle and CE is the tangent at D. If $\angle DEF = 29^\circ$, $\angle EDF = 39^\circ$, find $\angle HDC$



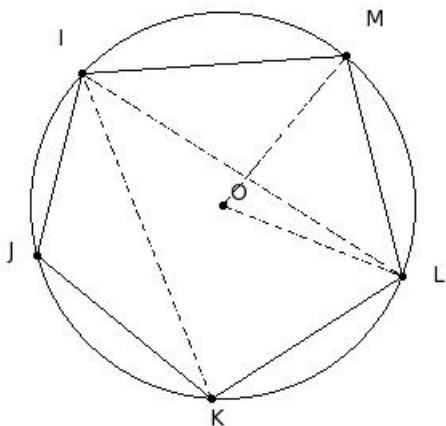
- (i) 98° (ii) 73° (iii) 83° (iv) 78° (v) 68°

22. In the given figure, O is the centre of the circle. If $\angle ECD = 60^\circ$, find reflex $\angle DOB$



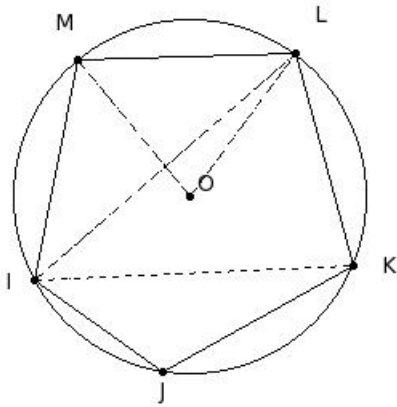
- (i) 250° (ii) 240° (iii) 255° (iv) 270° (v) 245°

23. In the given figure, a pentagon is inscribed in a circle with centre O. Given $JK = KL = LM$ and $\angle JKL = 108^\circ$. Find $\angle JIK$



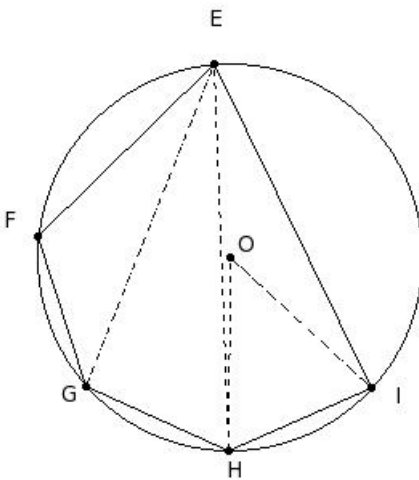
- (i) 36° (ii) 46° (iii) 41° (iv) 51° (v) 66°

24. In the given figure, a pentagon is inscribed in a circle with centre O. Given $JK = KL = LM$ and $\angle JKL = 104^\circ$.

Find $\angle JIM$ 

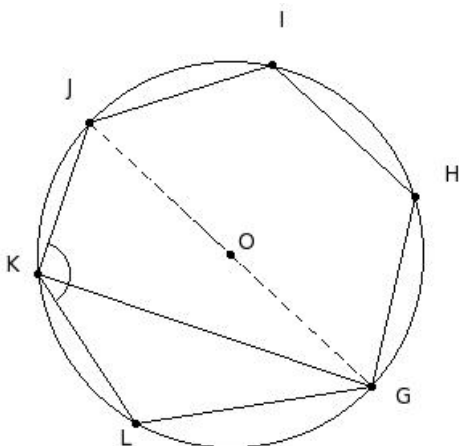
- (i) 114° (ii) 144° (iii) 129° (iv) 124° (v) 119°

25. In the given figure, a pentagon is inscribed in a circle with centre O. Given $FG = GH = HI$ and $\angle FGH = 132^\circ$. Find $\angle HOI$



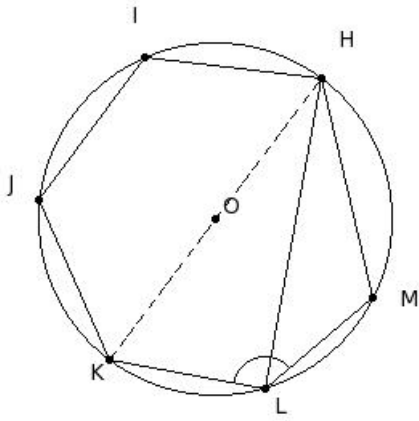
- (i) 63° (ii) 53° (iii) 48° (iv) 78° (v) 58°

26. In the given figure, a hexagon is inscribed in a circle with centre O. Given $GH = HI = IJ$ and $\angle JKL = 127.94^\circ$. Find $\angle GKL$



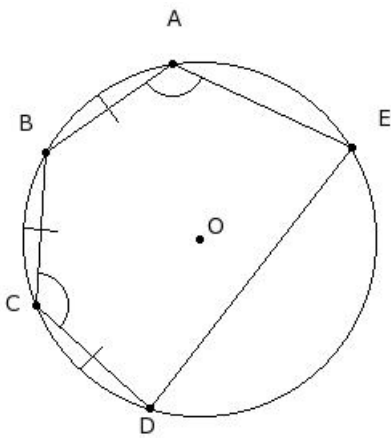
- (i) 37.94° (ii) 67.94° (iii) 42.94° (iv) 52.94° (v) 47.94°

27. In the given figure, a hexagon is inscribed in a circle with centre O. Given $HI = IJ = JK$ and $\angle KLM = 129.1^\circ$. Find $\angle MHI$



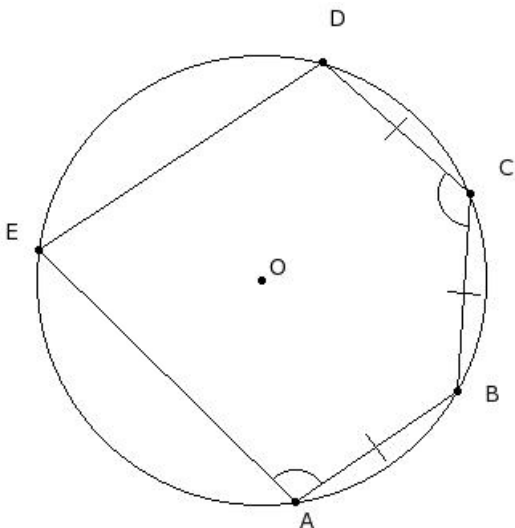
- (i) 140.9° (ii) 125.9° (iii) 120.9° (iv) 115.9° (v) 110.9°

28. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 103^\circ$ and $\angle EAB = 120^\circ$. Find $\angle ABC$



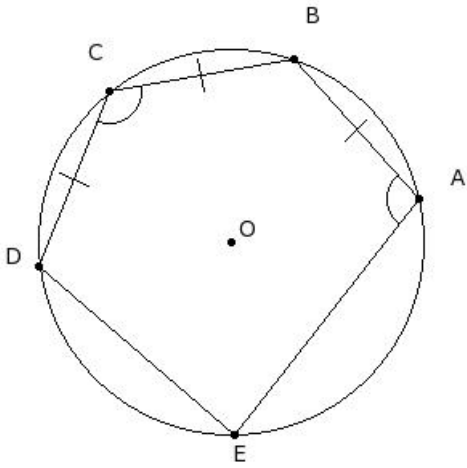
- (i) 133° (ii) 108° (iii) 103° (iv) 118° (v) 113°

29. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 104^\circ$ and $\angle EAB = 101^\circ$. Find $\angle CDE$



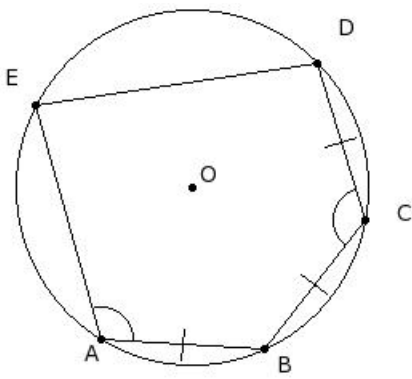
- (i) 127° (ii) 147° (iii) 132° (iv) 117° (v) 122°

30. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 116^\circ$ and $\angle EAB = 100^\circ$. Find $\angle AED$



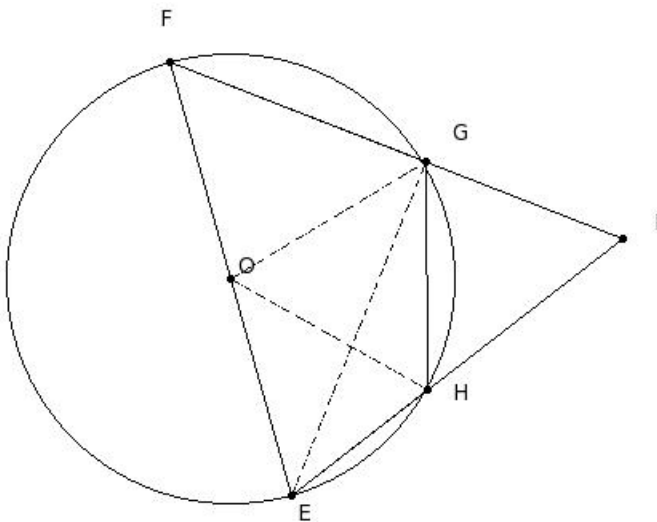
- (i) 111° (ii) 106° (iii) 126° (iv) 96° (v) 101°

31. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 111^\circ$ and $\angle EAB = 109^\circ$. Find $\angle EAD$



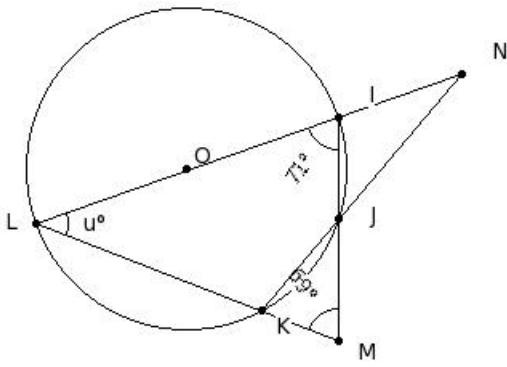
- (i) 40° (ii) 70° (iii) 45° (iv) 50° (v) 55°

32. In the given figure, O is the centre of the circle. EF is a diameter of the circle and GH is equal to radius. Find $\angle EIF$



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

33. In the given figure, O is the centre of the circle. If $\angle JMK = 69^\circ$ and $\angle JIL = 71^\circ$, find $\angle ILK$



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

34. Which of the following statements are true?

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

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

35. Which of the following are cyclic quadrilaterals?

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

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

36. Which of the following statements are true?

- a) If a circle can be inscribed in a quadrilateral, then it must be a square
- b) It is always possible to inscribe a circle in a quadrilateral
- c) 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
- d) If a circle can be inscribed in a quadrilateral, it must be a kite
- e) It is always possible to inscribe a circle in a regular polygon

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

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

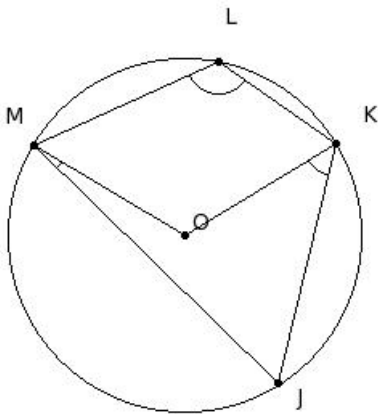
38. The opposite angles in a cyclic quadrilateral are

- (i) complementary
- (ii) equal

(iii) supplementary

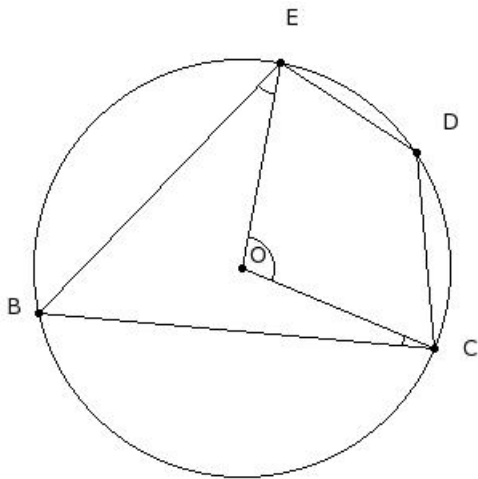
(iv) linear pair

39. In the given figure, O is the centre of the circle. If $\angle JKO = 45^\circ$ and $\angle OMJ = 13^\circ$, find $\angle KLM$



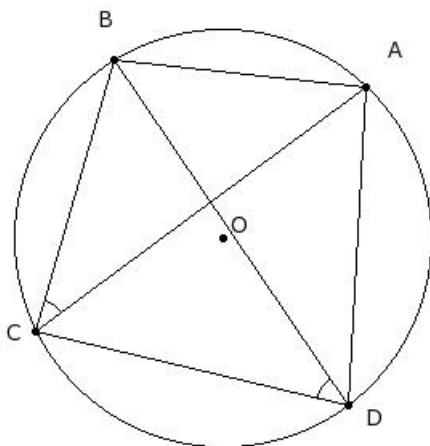
- (i) 122° (ii) 152° (iii) 132° (iv) 127° (v) 137°

40. In the given figure, O is the centre of the circle. If $\angle BCO = 18^\circ$ and $\angle OEB = 33^\circ$, find $\angle COE$



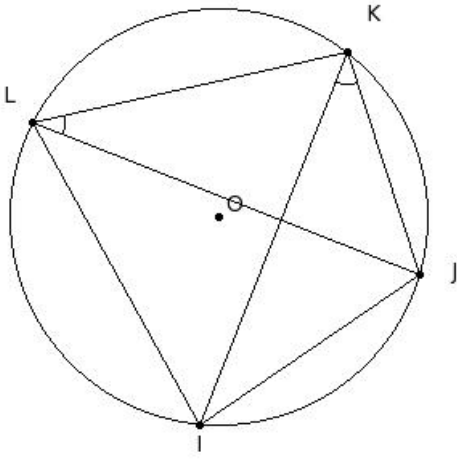
- (i) 112° (ii) 102° (iii) 117° (iv) 107° (v) 132°

41. In the given figure, ABCD is a cyclic quadrilateral. If $\angle ACB = 37^\circ$ and $\angle CDB = 43^\circ$, find $\angle ABC$



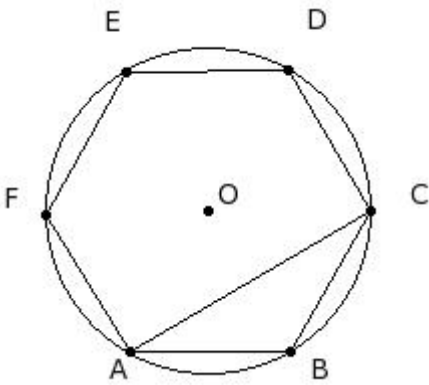
- (i) 130° (ii) 110° (iii) 115° (iv) 105° (v) 100°

42. In the given figure, IJKL is a cyclic quadrilateral. If $\angle IKJ = 39^\circ$ and $\angle KLJ = 34^\circ$, find $\angle ILK$



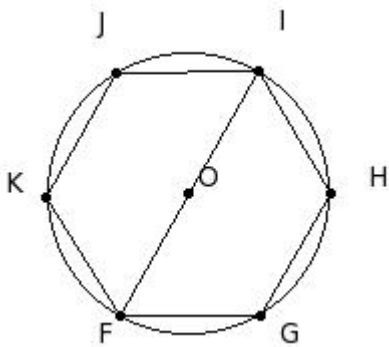
- (i) 78° (ii) 88° (iii) 103° (iv) 83° (v) 73°

43. In the given figure, ABCDEF is a regular hexagon. Find $\angle ACB$



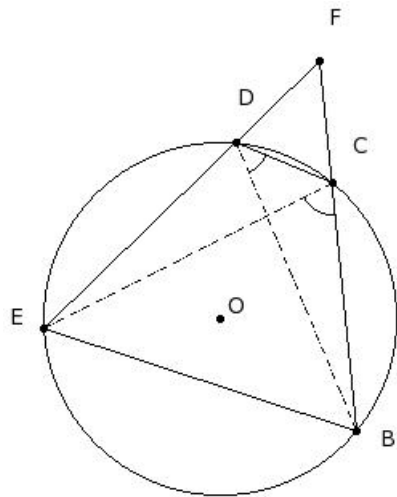
- (i) 45° (ii) 40° (iii) 35° (iv) 30° (v) 60°

44. In the given figure, FGHIJK is a regular hexagon. Find $\angle FIH$



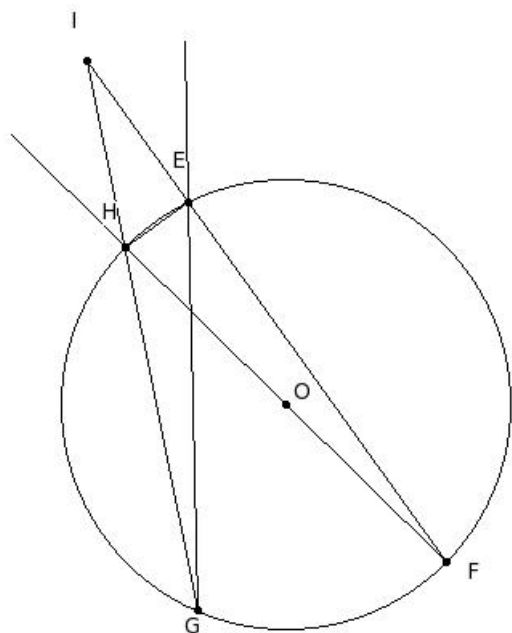
- (i) 65° (ii) 90° (iii) 75° (iv) 60° (v) 70°

45. In the given figure, BCDE is a cyclic quadrilateral. If $\angle BCE = 69^\circ$ and $\angle CDB = 45^\circ$, find $\angle EBC$



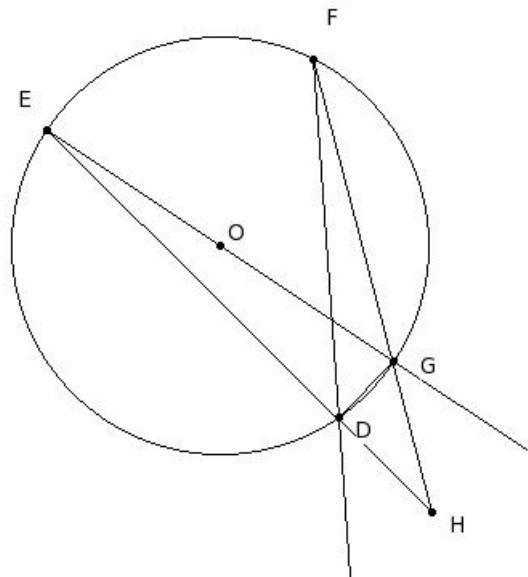
- (i) 66° (ii) 76° (iii) 96° (iv) 81° (v) 71°

46. In the given figure, $\angle EGH = 10^\circ$ and $\angle EIH = 24^\circ$, find $\angle GEH$



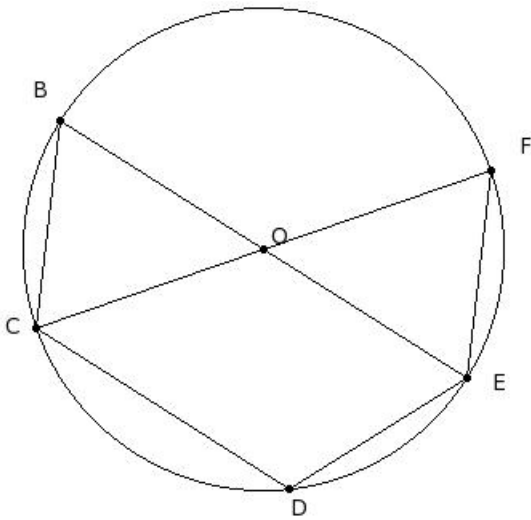
- (i) 66° (ii) 86° (iii) 61° (iv) 71° (v) 56°

47. In the given figure, $\angle DFG = 11^\circ$ and $\angle DHG = 31^\circ$, find $\angle EGD$



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

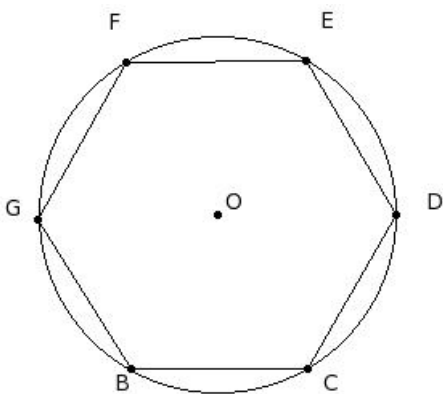
48. In the given figure, BC, CD, DE and EF are chords and BE, CF are diameters passing through the centre O. If $\angle BOC = 51^\circ$. Find $\angle CDE$



- (i) 130.5° (ii) 125.5° (iii) 145.5° (iv) 120.5° (v) 115.5°

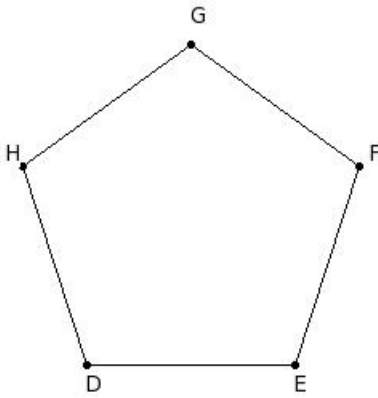
49. In the given figure, BCDEFG is a regular hexagon inscribed in a circle with centre O. Which of the following are true?

- a) $\angle BDC = 60^\circ$
- b) $\angle BOG = 60^\circ$
- c) $\angle GED = 90^\circ$
- d) $\angle CFD = 30^\circ$
- e) $\angle COE = 120^\circ$



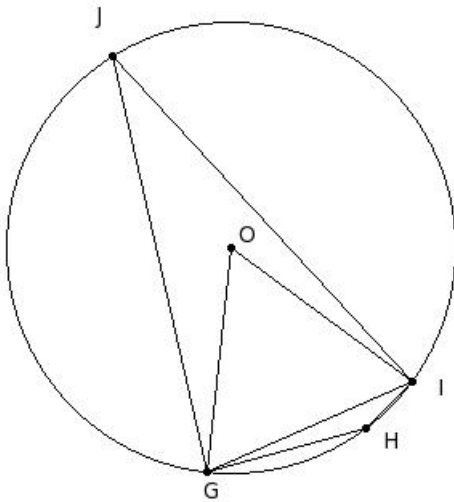
- (i) {a,e,b} (ii) {a,b} (iii) {b,c,d,e} (iv) {a,c} (v) {a,d}

50. In the given figure, DEFGH is a regular pentagon. Find $\angle DHF$



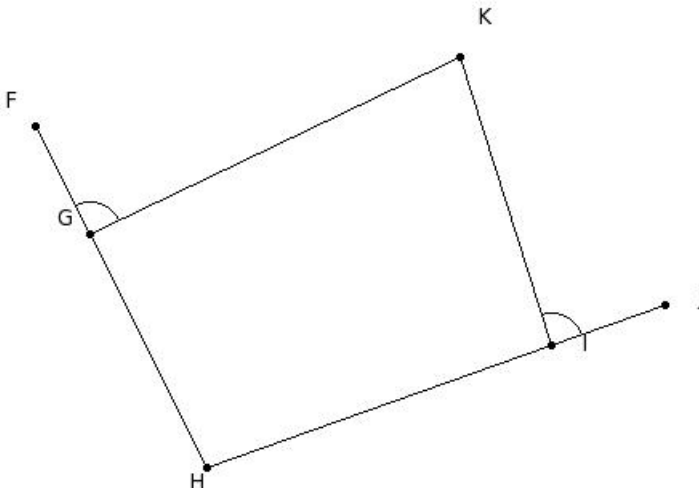
- (i) 72° (ii) 82° (iii) 87° (iv) 102° (v) 77°

51. In the given figure, GI is a chord which is equal to the radius of the circle. Find $\angle J$ and $\angle H$



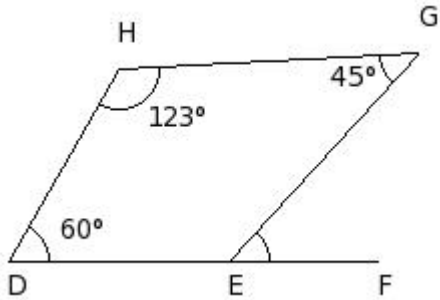
- (i) 30° & 150°
 (ii) 50° & 130°
 (iii) 45° & 135°
 (iv) 60° & 120°
 (v) 40° & 140°

52. In the given figure, GHIK is a cyclic quadrilateral where HI and HG are produced to J and F respectively. If $\angle FGK = 91^\circ$, find $\angle JIK$



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

53. In the given figure, $\angle D = 60^\circ$, $\angle G = 45^\circ$ and $\angle H = 123^\circ$, find $\angle GEF$



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

54. Which of the following statements are true?

- a) A cyclic rhombus is a square
 - b) A cyclic parallelogram is a rectangle
 - c) A cyclic kite is a square
 - d) A cyclic parallelogram is a rhombus
 - e) A cyclic trapezium is a rectangle
- (i) {d,b} (ii) {e,c,a} (iii) {a,b} (iv) {d,b,a} (v) {c,a}

55. Which of the following statements are true?

- a) All parallelograms are cyclic
 - b) An isosceles trapezium is cyclic
 - c) The exterior angle of a quadrilateral and its interior opposite angle are supplementary
 - d) Either pair of opposite angles of a cyclic quadrilateral are supplementary
 - e) A quadrilateral in which the diagonals are equal and bisect each other is cyclic
- (i) {a,b} (ii) {a,b,d} (iii) {b,d,e} (iv) {c,d} (v) {a,c,e}

56. Which of the following are not cyclic quadrilaterals?

- a) isosceles trapezium
 - b) rhombus
 - c) rectangle
 - d) square
 - e) kite
- (i) {c,e} (ii) {a,b} (iii) {d,a,b} (iv) {c,e,b} (v) {b,e}

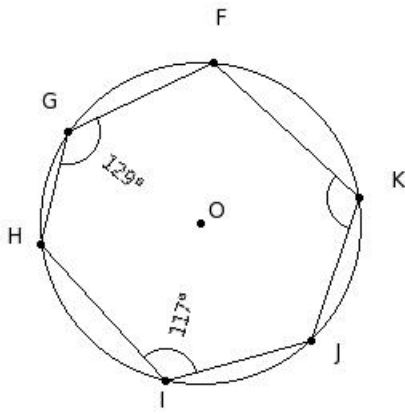
57. If FGHI is a cyclic quadrilateral and $\angle F - \angle H = 48^\circ$, then $\angle H$

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

58. If BCDE is a cyclic parallelogram, then $\angle E$

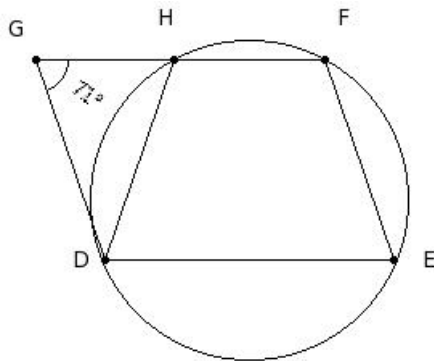
- (i) 105° (ii) 95° (iii) 120° (iv) 100° (v) 90°

59. FGHIJK is a hexagon inscribed in a circle. Given $\angle FGH = 129^\circ$ & $\angle HIJ = 117^\circ$, find $\angle JKF$



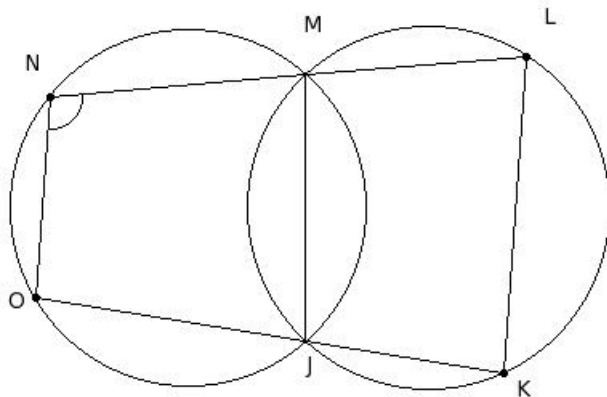
- (i) 119° (ii) 144° (iii) 114° (iv) 129° (v) 124°

60. In the given figure, DEFG is a parallelogram. The circumcircle of $\triangle DEF$ cuts FG at H. Given $\angle DGH = 71^\circ$, find $\angle GDH$



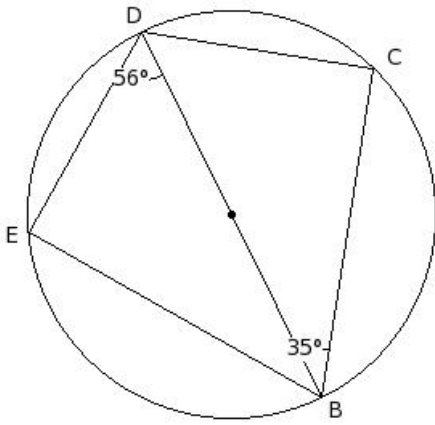
- (i) 38° (ii) 43° (iii) 48° (iv) 68° (v) 53°

61. In the given figure, NL and OK are two lines passing through the points of intersection of the two circles at M and J. If $\angle ONM = 99^\circ$, find $\angle MLK$



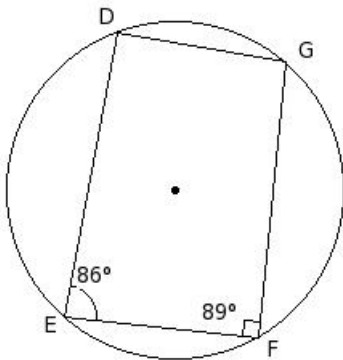
- (i) 111° (ii) 86° (iii) 81° (iv) 96° (v) 91°

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



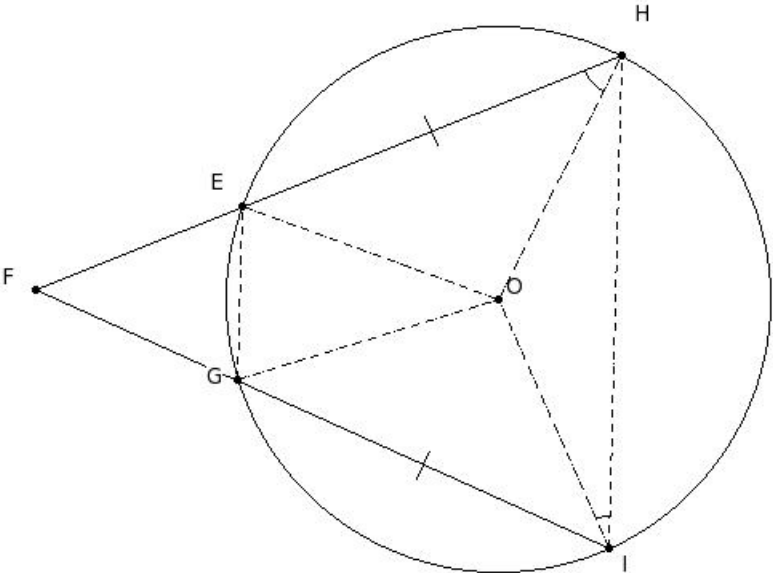
- (i) $B = 68^\circ$, $C = 90^\circ$, $D = 112^\circ$, $E = 90^\circ$
- (ii) $B = 70^\circ$, $C = 90^\circ$, $D = 110^\circ$, $E = 90^\circ$
- (iii) $B = 69^\circ$, $C = 90^\circ$, $D = 111^\circ$, $E = 90^\circ$
- (iv) $B = 71^\circ$, $C = 90^\circ$, $D = 109^\circ$, $E = 90^\circ$
- (v) $B = 67^\circ$, $C = 90^\circ$, $D = 113^\circ$, $E = 90^\circ$

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



- (i) $D = 90^\circ$, $G = 93^\circ$
- (ii) $D = 91^\circ$, $G = 94^\circ$
- (iii) $D = 93^\circ$, $G = 96^\circ$
- (iv) $D = 92^\circ$, $G = 95^\circ$
- (v) $D = 89^\circ$, $G = 92^\circ$

64. In the given figure, $\angle OHE = 42^\circ$ & $\angle OIH = 25^\circ$, find $\angle GFE$



- (i) 51° (ii) 46° (iii) 61° (iv) 76° (v) 56°
-

Assignment Key

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

- 56) (v)
- 57) (ii)
- 58) (v)
- 59) (iii)
- 60) (i)
- 61) (iii)
- 62) (iii)
- 63) (ii)
- 64) (ii)