

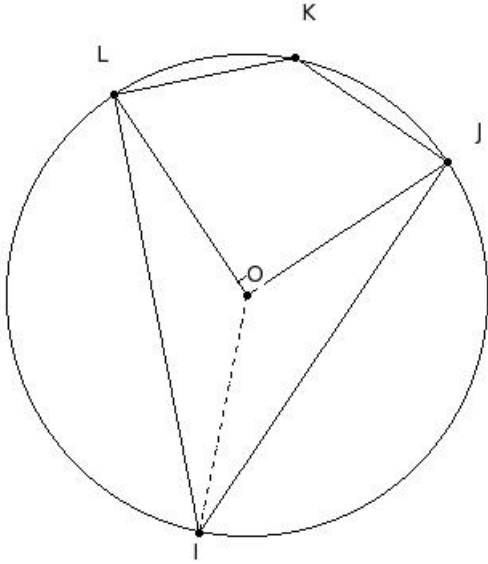
EduSahara™ Learning Center Assignment

Grade : Class IX, SSC

Chapter : Circles

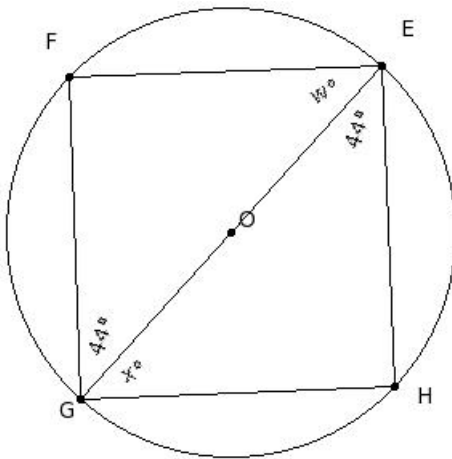
Name : Cyclic Quadrilateral

1. O is the centre of the circle. If $\angle JOL = 90^\circ$, find $\angle I$



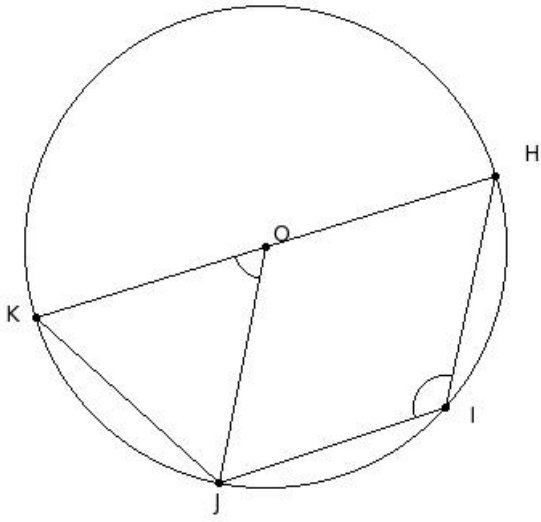
- (i) 45° (ii) 75° (iii) 55° (iv) 60° (v) 50°

2. O is the centre of the circle. If $\angle EGF = 44^\circ$ and $\angle GEH = 44^\circ$, find w° , x°



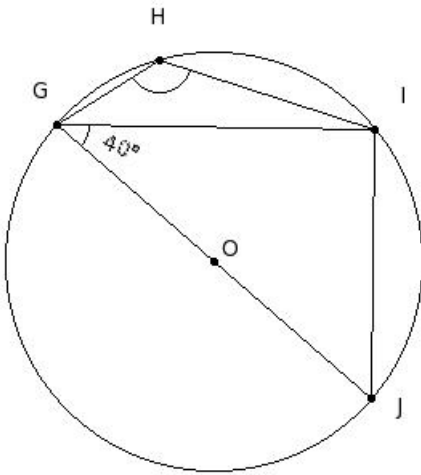
- (i) $56^\circ, 56^\circ$ (ii) $76^\circ, 66^\circ$ (iii) $46^\circ, 46^\circ$ (iv) $36^\circ, 46^\circ$

3. O is the centre of the circle. If $\angle HIJ = 121^\circ$, find $\angle JOK$



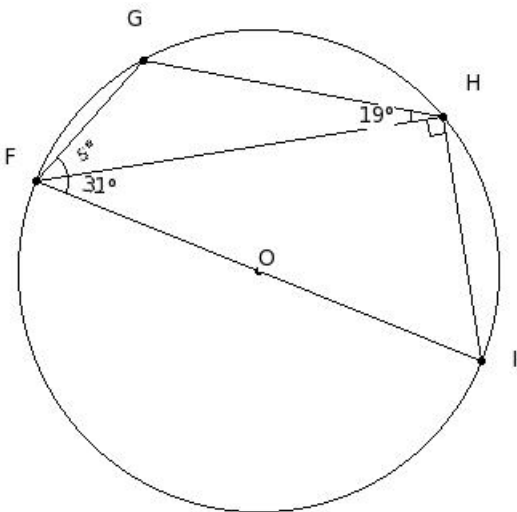
- (i) 77° (ii) 67° (iii) 62° (iv) 92° (v) 72°

4. O is the centre of the circle and $\angle JGI = 40^\circ$, find $\angle GHI$



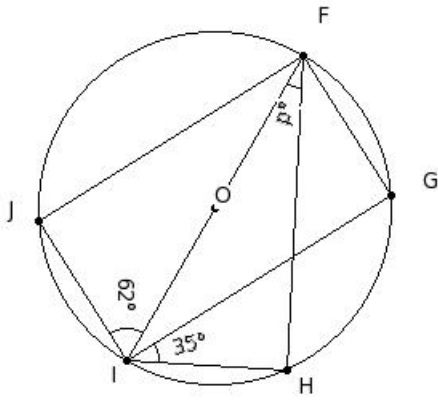
- (i) 140° (ii) 135° (iii) 130° (iv) 145° (v) 160°

5. O is the centre of the circle. If $\angle HFI = 31^\circ$ and $\angle FHG = 19^\circ$, find $\angle GFH$



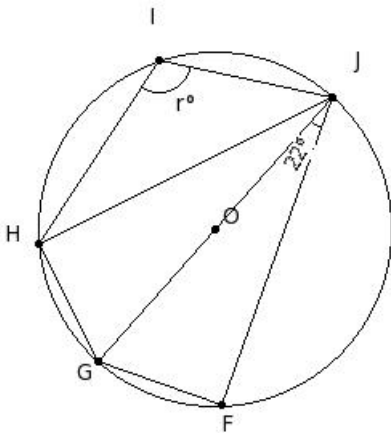
- (i) 70° (ii) 40° (iii) 55° (iv) 50° (v) 45°

6. In the given figure, O is the centre of the circle and FI is a diameter. If $\angle FIJ = 62^\circ$ and $\angle GIH = 35^\circ$, find $\angle IFH$



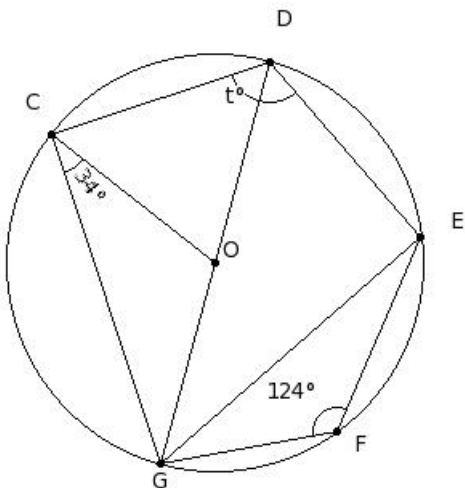
- (i) 31° (ii) 56° (iii) 36° (iv) 26° (v) 41°

7. 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 $\angle FJG = 22^\circ$, find $\angle JIH$



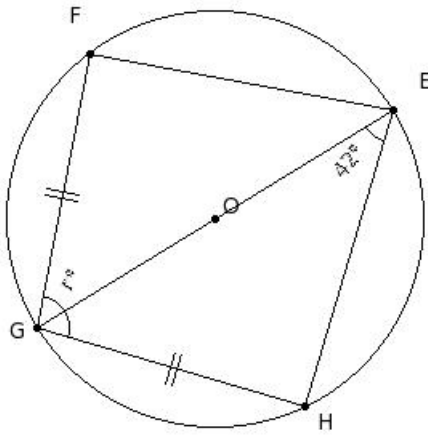
- (i) 117° (ii) 112° (iii) 122° (iv) 142° (v) 127°

8. In the given figure, O is the centre of the circle and chord CD is equal to chord DE and DG is a diameter. If $\angle GCO = 34^\circ$ and $\angle EFG = 124^\circ$, find $\angle CDE$



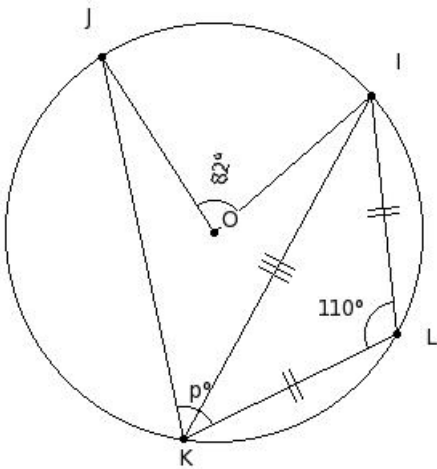
- (i) 142° (ii) 117° (iii) 112° (iv) 122° (v) 127°

9. In the given figure, O is the centre of the circle, chord FG is equal to chord GH and EG is a diameter. If $\angle HEG = 42^\circ$ find $\angle FGH$



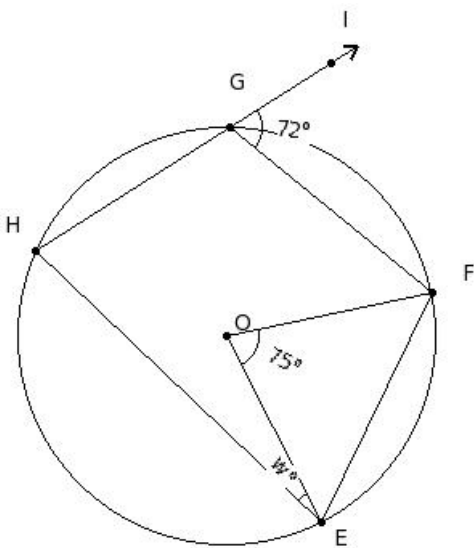
- (i) 106° (ii) 96° (iii) 111° (iv) 101° (v) 126°

10. In the given figure, O is the centre of the circle, chord IL is equal to chord LK. If $\angle IOJ = 82^\circ$ and $\angle ILK = 110^\circ$, find $\angle JKL$



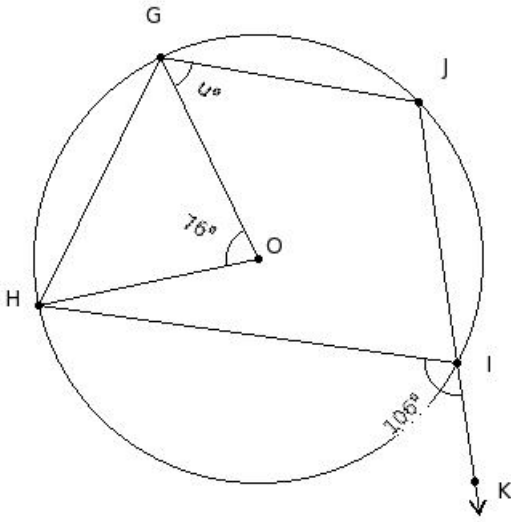
- (i) 76° (ii) 91° (iii) 106° (iv) 81° (v) 86°

11. In the given figure, O is the centre of the circle. If $\angle EOF = 75^\circ$ and $\angle FGI = 72^\circ$, find $\angle HEO$



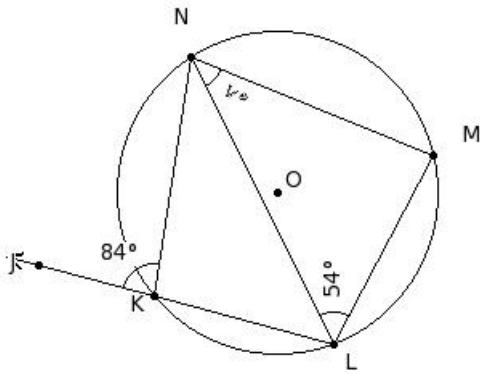
- (i) 49.5° (ii) 34.5° (iii) 29.5° (iv) 24.5° (v) 19.5°

12. In the given figure, O is the centre of the circle. If $\angle GOH = 76^\circ$ and $\angle HIK = 106^\circ$, find $\angle JGO$



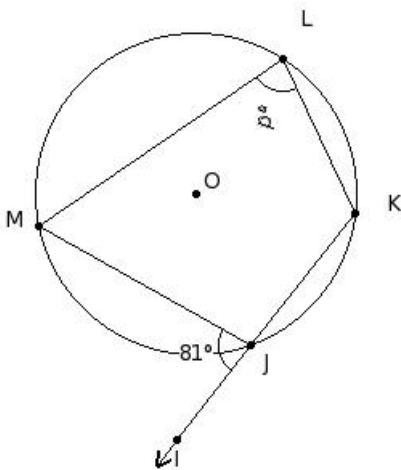
- (i) 54° (ii) 59° (iii) 69° (iv) 84° (v) 64°

13. In the given figure, O is the centre of the circle. If $\angle NLM = 54^\circ$ and $\angle JKN = 84^\circ$, find $\angle LNM$



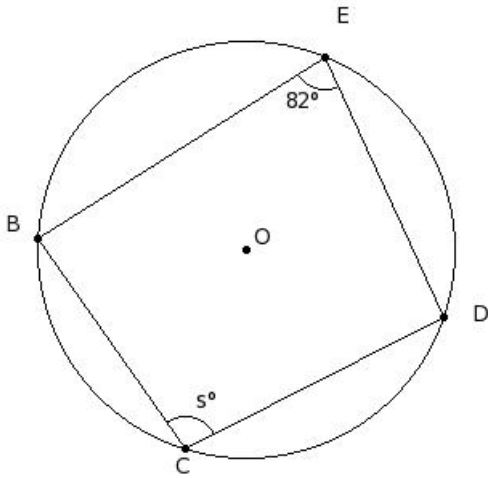
- (i) 47° (ii) 72° (iii) 57° (iv) 42° (v) 52°

14. In the given figure, O is the centre of the circle. If $\angle IJM = 81^\circ$, find $\angle KLM$



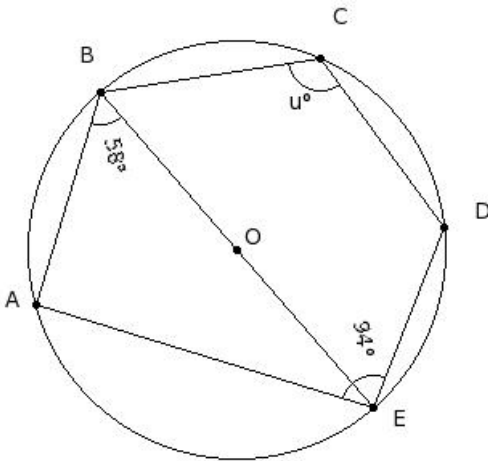
- (i) 91° (ii) 81° (iii) 86° (iv) 111° (v) 96°

15. In the given figure, O is the centre of the circle. If $\angle DEB = 82^\circ$, find $\angle BCD$



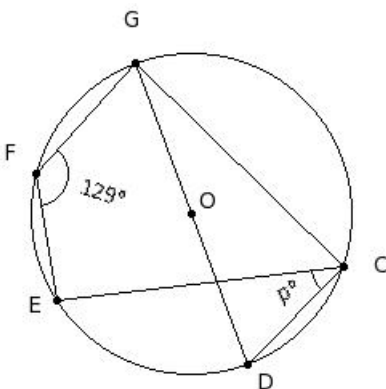
- (i) 113° (ii) 108° (iii) 103° (iv) 128° (v) 98°

16. In the given figure, O is the centre of the circle and BE is a diameter. If $\angle DEA = 94^\circ$ and $\angle ABE = 58^\circ$, find $\angle BCD$



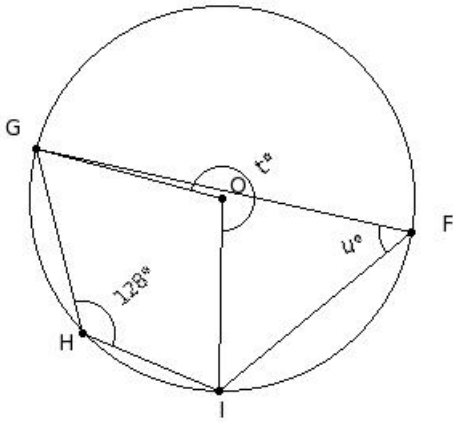
- (i) 123° (ii) 118° (iii) 128° (iv) 148° (v) 133°

17. In the given figure, O is the centre of the circle and DG is a diameter. If $\angle EFG = 129^\circ$, find $\angle ECD$



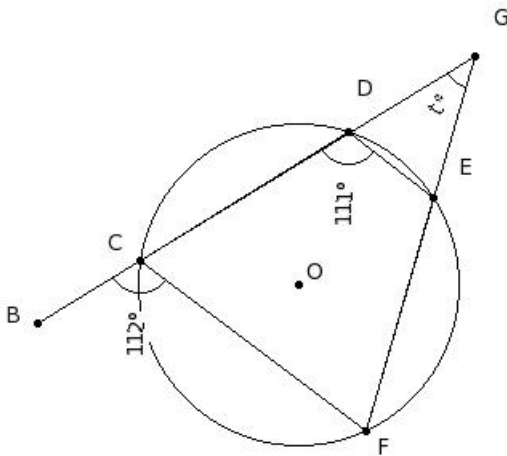
- (i) 39° (ii) 54° (iii) 49° (iv) 44° (v) 69°

18. In the given figure, O is the centre of the circle. If $\angle GHI = 128^\circ$, find $\angle IOG + \angle GFI$



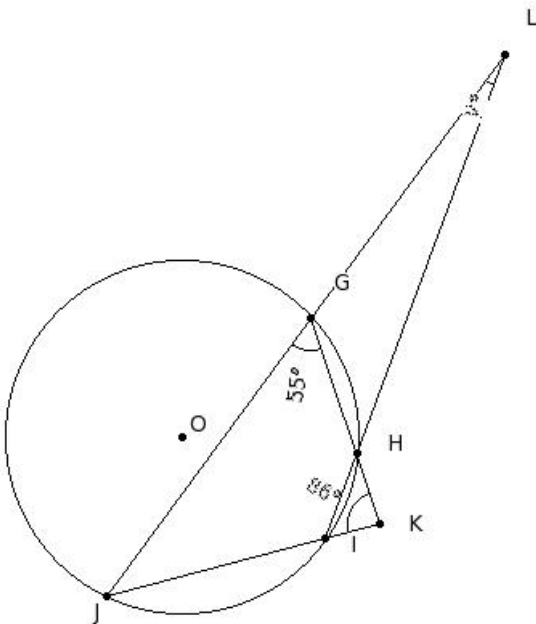
- (i) 323° (ii) 308° (iii) 338° (iv) 318° (v) 313°

19. In the given figure, O is the centre of the circle. If $\angle BCF = 112^\circ$ and $\angle CDE = 111^\circ$, find $\angle DGE$



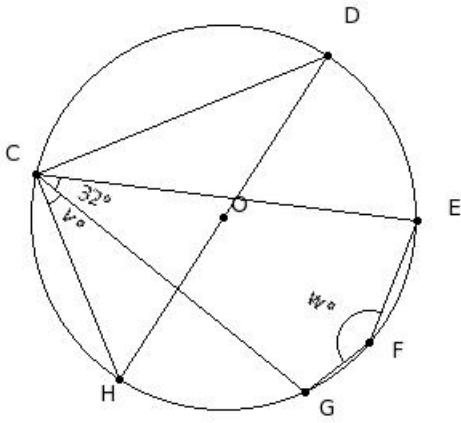
- (i) 58° (ii) 43° (iii) 73° (iv) 48° (v) 53°

20. In the given figure, O is the centre of the circle. If $\angle HKI = 86^\circ$ and $\angle HGJ = 55^\circ$, find $\angle GLH$



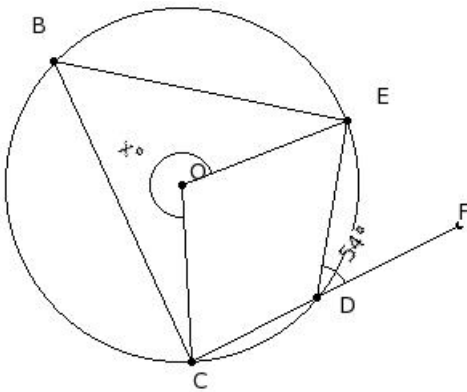
- (i) 21° (ii) 31° (iii) 46° (iv) 16° (v) 26°

21. In the given figure, O is the centre and DH is a diameter of the circle and chord DE is equal to chord GH. If $\angle ECG = 32^\circ$, find $\angle GCH + \angle EFG$



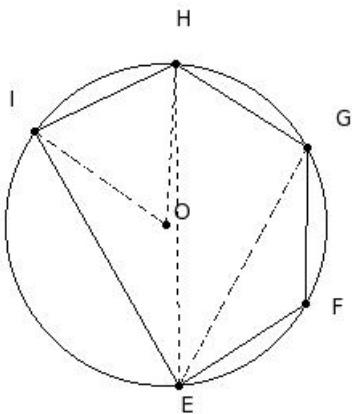
- (i) 177° (ii) 192° (iii) 207° (iv) 187° (v) 182°

22. In the given figure, O is the centre of the circle. If $\angle FDE = 54^\circ$, find reflex $\angle EOC$



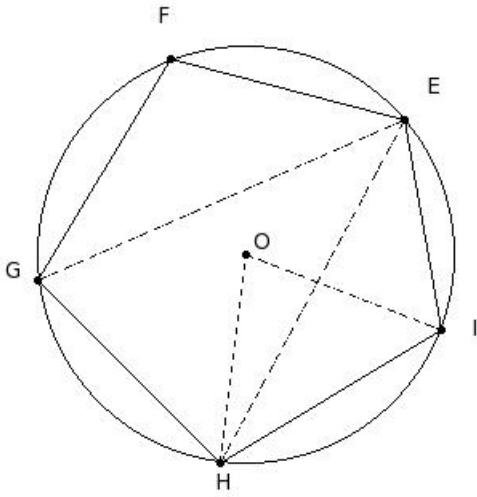
- (i) 252° (ii) 267° (iii) 282° (iv) 257° (v) 262°

23. In the given figure, a pentagon is inscribed in a circle with centre O. Given $FG = GH = HI$ and $\angle FGH = 122^\circ$. Find $\angle FEG$



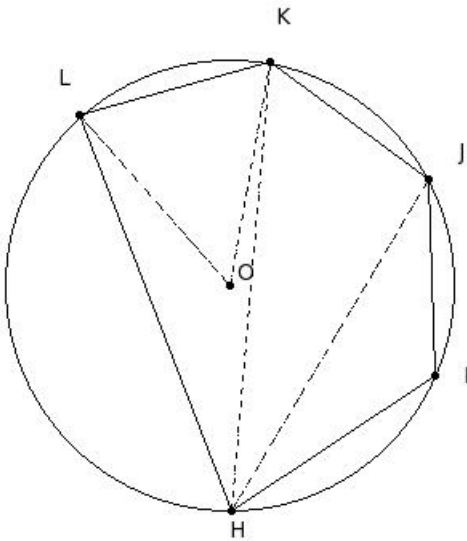
- (i) 44° (ii) 59° (iii) 34° (iv) 29° (v) 39°

24. In the given figure, a pentagon is inscribed in a circle with centre O. Given $FG = GH = HI$ and $\angle FGH = 104^\circ$. Find $\angle FEI$



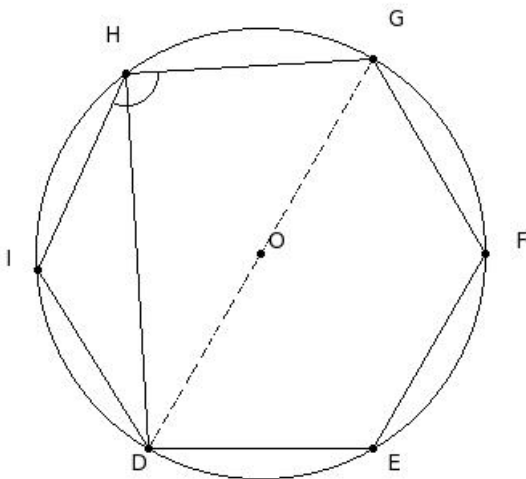
- (i) 119° (ii) 124° (iii) 144° (iv) 114° (v) 129°

25. In the given figure, a pentagon is inscribed in a circle with centre O. Given $IJ = JK = KL$ and $\angle IJK = 128^\circ$. Find $\angle KOL$



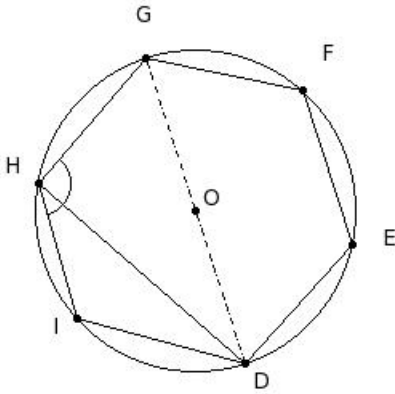
- (i) 62° (ii) 67° (iii) 52° (iv) 57° (v) 82°

26. In the given figure, a hexagon is inscribed in a circle with centre O. Given $DE = EF = FG$ and $\angle GHI = 117.61^\circ$. Find $\angle DHI$



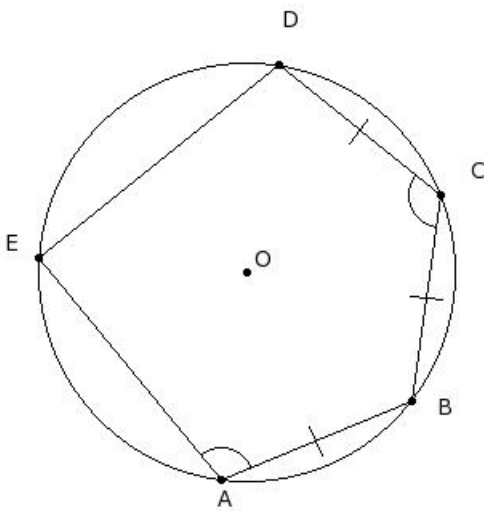
- (i) 57.61° (ii) 37.61° (iii) 27.61° (iv) 32.61° (v) 42.61°

27. In the given figure, a hexagon is inscribed in a circle with centre O. Given $DE = EF = FG$ and $\angle GHI = 123.39^\circ$.

Find $\angle IDE$ 

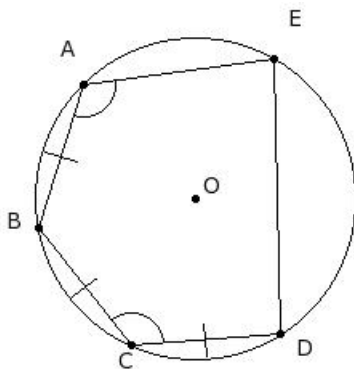
- (i) 126.61° (ii) 121.61° (iii) 116.61° (iv) 131.61° (v) 146.61°

28. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 119^\circ$ and $\angle EAB = 107^\circ$. Find $\angle ABC$



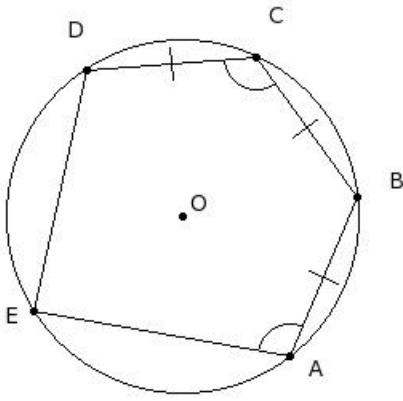
- (i) 129° (ii) 149° (iii) 119° (iv) 134° (v) 124°

29. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 112^\circ$ and $\angle EAB = 115^\circ$. Find $\angle CDE$



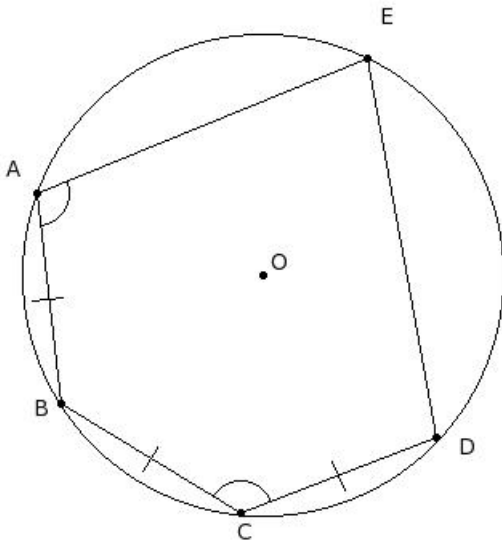
- (i) 109° (ii) 99° (iii) 114° (iv) 104° (v) 129°

30. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 117^\circ$ and $\angle EAB = 103^\circ$. Find $\angle AED$



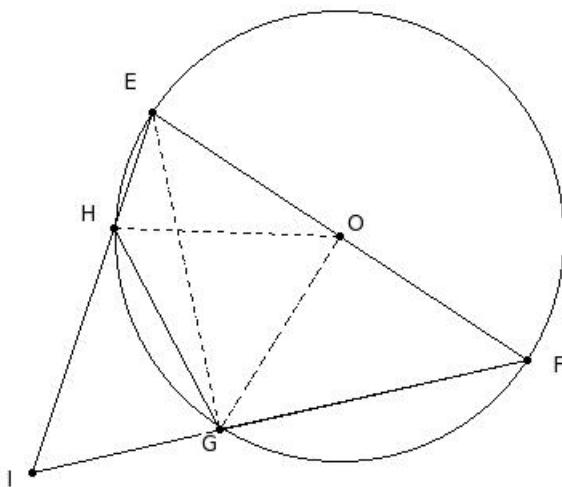
- (i) 109.5° (ii) 94.5° (iii) 99.5° (iv) 104.5° (v) 124.5°

31. In the given figure, a pentagon is inscribed in a circle with centre O. Given $AB = BC = CD$, $\angle BCD = 105^\circ$ and $\angle EAB = 106^\circ$. Find $\angle EAD$



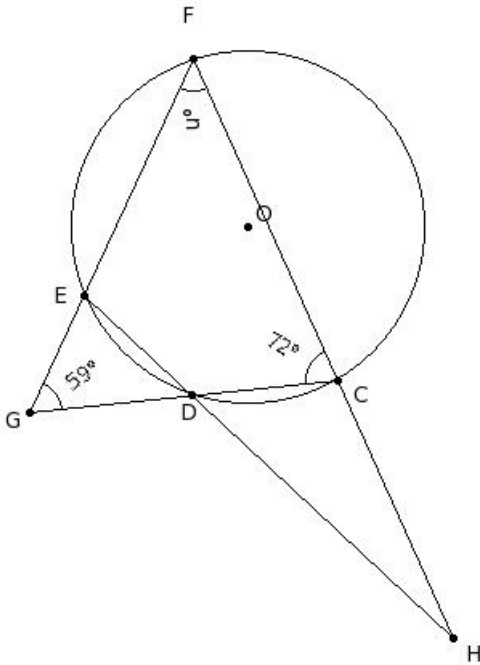
- (i) 46° (ii) 61° (iii) 41° (iv) 36° (v) 31°

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) 65° (iii) 70° (iv) 75° (v) 90°

33. In the given figure, O is the centre of the circle. If $\angle DGE = 59^\circ$ and $\angle DCF = 72^\circ$, find $\angle CFE$



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

34. Which of the following statements are true?

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

35. Which of the following are cyclic quadrilaterals?

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

36. Which of the following statements are true?

- a) It is always possible to inscribe a circle in a regular polygon
 - b) If a circle can be inscribed in a quadrilateral, then it must be a square
 - c) It is always possible to inscribe a circle in a quadrilateral
 - d) If a circle can be inscribed in a quadrilateral, it must be a kite
 - e) 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
- (i) {c,e} (ii) {a,e} (iii) {b,a} (iv) {d,b,a} (v) {c,e,a}

37. Which of the following statements are true?

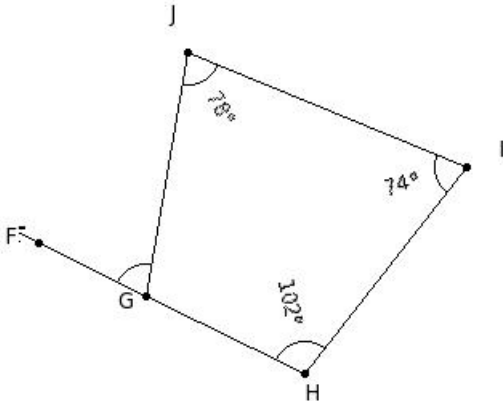
- a) Angles in the same segment are equal
- b) Angles in the opposite segments are supplementary

- c) Angles in the opposite segments are complementary
 d) Angles subtended by equal length arcs in two circles are equal
 (i) {d,b} (ii) {c,b,a} (iii) {c,d,a} (iv) {a,b} (v) {c,a}

38. The opposite angles in a cyclic quadrilateral are

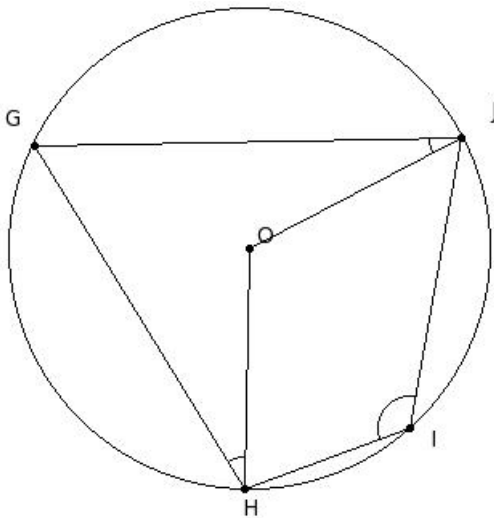
- (i) supplementary
 (ii) equal
 (iii) linear pair
 (iv) complementary

39. In the given figure, GHIJ is cyclic quadrilateral. If $\angle HIJ = 74^\circ$, find $\angle FGJ$



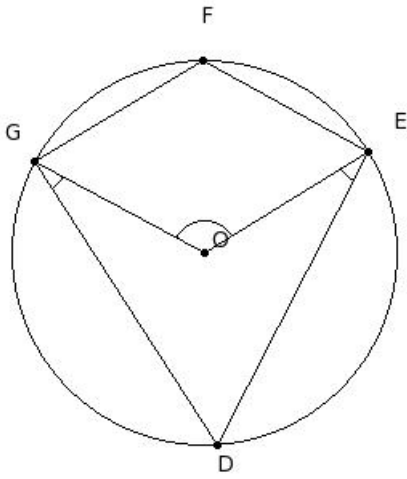
- (i) 104° (ii) 89° (iii) 79° (iv) 74° (v) 84°

40. In the given figure, O is the centre of the circle. If $\angle GHO = 33^\circ$ and $\angle OJG = 27^\circ$, find $\angle HIJ$



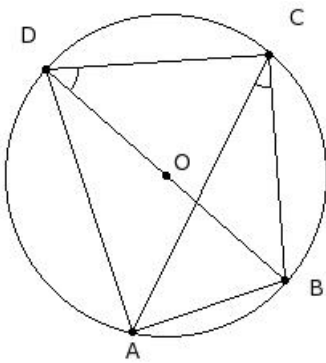
- (i) 130° (ii) 150° (iii) 120° (iv) 125° (v) 135°

41. In the given figure, O is the centre of the circle. If $\angle DEO = 31^\circ$ and $\angle OGD = 29^\circ$, find $\angle EOG$



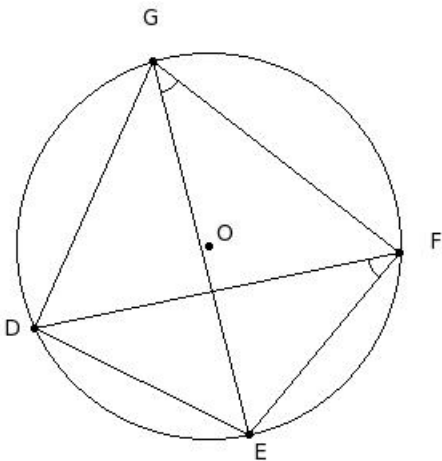
- (i) 120° (ii) 150° (iii) 125° (iv) 130° (v) 135°

42. In the given figure, ABCD is a cyclic quadrilateral. If $\angle ACB = 30^\circ$ and $\angle CDB = 45^\circ$, find $\angle ABC$



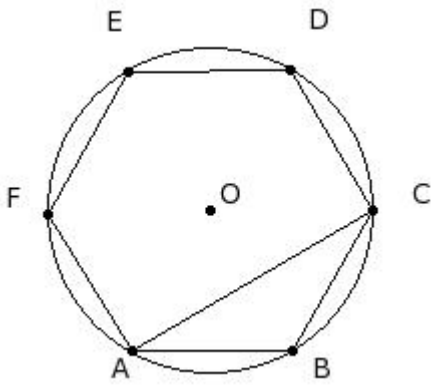
- (i) 105° (ii) 120° (iii) 110° (iv) 135° (v) 115°

43. In the given figure, DEFG is a cyclic quadrilateral. If $\angle DFE = 39^\circ$ and $\angle FGE = 38^\circ$, find $\angle DGF$



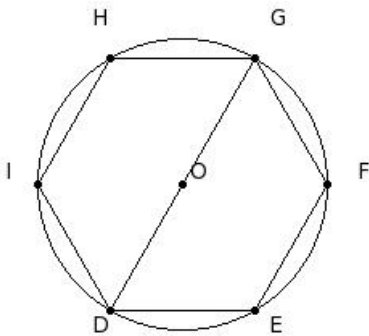
- (i) 92° (ii) 87° (iii) 77° (iv) 82° (v) 107°

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



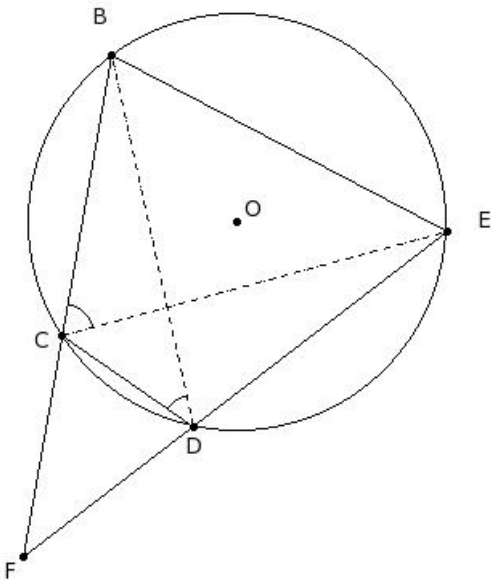
- (i) 30° (ii) 40° (iii) 35° (iv) 45° (v) 60°

45. In the given figure, DEFGHI is a regular hexagon. Find $\angle DGF$



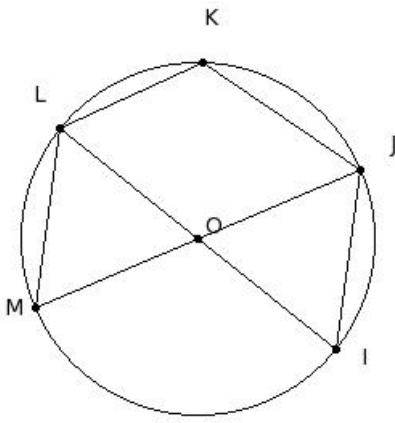
- (i) 90° (ii) 70° (iii) 60° (iv) 75° (v) 65°

46. In the given figure, BCDE is a cyclic quadrilateral. If $\angle BCE = 65^\circ$ and $\angle CDB = 43^\circ$, find $\angle CDE$



- (i) 118° (ii) 113° (iii) 123° (iv) 138° (v) 108°

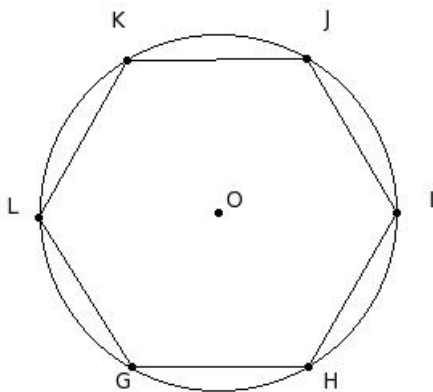
47. In the given figure, IJ, JK, KL and LM are chords and IL, JM are diameters passing through the centre O. If $\angle IOJ = 62^\circ$. Find $\angle JKL$



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

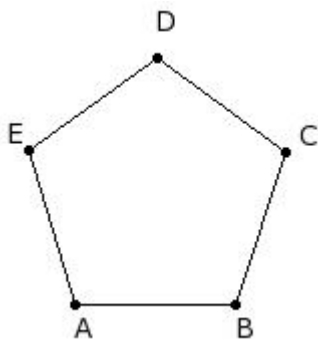
48. In the given figure, GHIJKL is a regular hexagon inscribed in a circle with centre O. Which of the following are true?

- a) $\angle GIH = 60^\circ$
- b) $\angle HOJ = 120^\circ$
- c) $\angle GOL = 60^\circ$
- d) $\angle LJI = 90^\circ$
- e) $\angle HKI = 30^\circ$



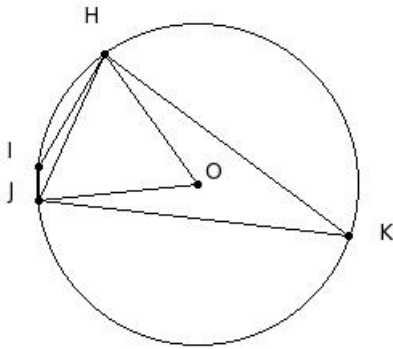
- (i) {a,c} (ii) {a,b} (iii) {b,c,d,e} (iv) {a,d} (v) {a,e,b}

49. In the given figure, ABCDE is a regular pentagon. Find $\angle AEC$



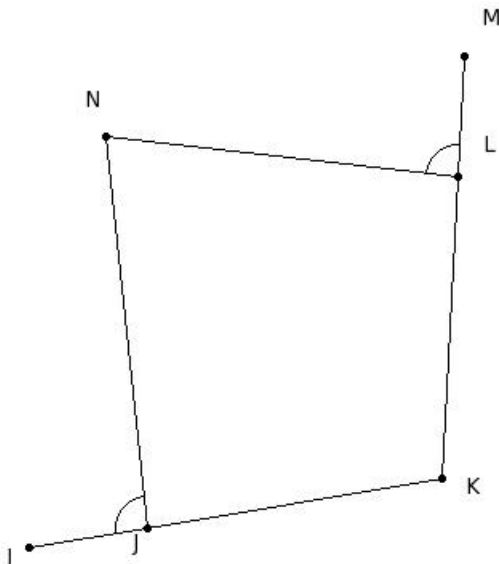
- (i) 77° (ii) 72° (iii) 82° (iv) 87° (v) 102°

50. In the given figure, HJ is a chord which is equal to the radius of the circle. Find $\angle K$ and $\angle I$



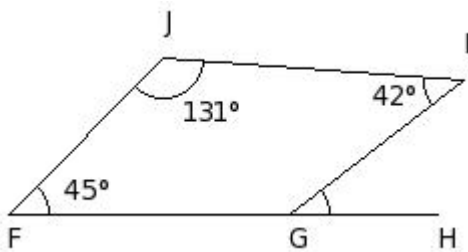
- (i) 40° & 140°
 (ii) 60° & 120°
 (iii) 45° & 135°
 (iv) 30° & 150°
 (v) 50° & 130°

51. In the given figure, JKLN is a cyclic quadrilateral where KL and KJ are produced to M and I respectively. If $\angle IJN = 93^\circ$, find $\angle MLN$



- (i) 87° (ii) 102° (iii) 92° (iv) 117° (v) 97°

52. In the given figure, $\angle F = 45^\circ$, $\angle I = 42^\circ$ and $\angle J = 131^\circ$, find $\angle IGH$



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

53. Which of the following statements are true?

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

e) A cyclic parallelogram is a rhombus

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

54. Which of the following statements are true?

a) All parallelograms are cyclic

b) The exterior angle of a quadrilateral and its interior opposite angle are supplementary

c) A quadrilateral in which the diagonals are equal and bisect each other is cyclic

d) Either pair of opposite angles of a cyclic quadrilateral are supplementary

e) An isosceles trapezium is cyclic

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

55. Which of the following are not cyclic quadrilaterals?

a) kite

b) rhombus

c) rectangle

d) isosceles trapezium

e) square

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

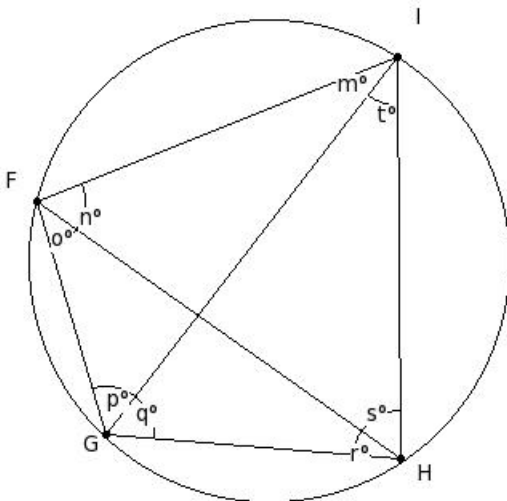
56. If EFGH is a cyclic quadrilateral and $\angle E - \angle G = 72^\circ$, then $\angle G$

(i) 64° (ii) 69° (iii) 84° (iv) 54° (v) 59°

57. If GHIJ is a cyclic parallelogram, then $\angle J$

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

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



(i) $\{(n,t),(s,r),(m,o),(p,q)\}$

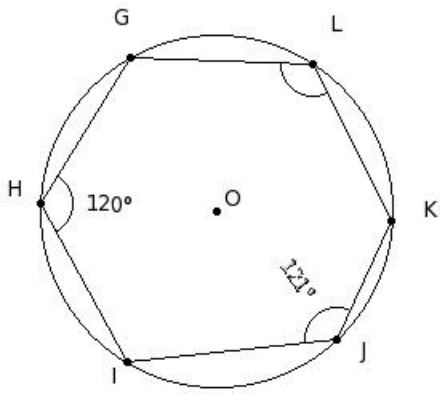
(ii) $\{(o,s),(p,m),(q,r),(n,t)\}$

(iii) $\{(n,t),(p,o),(s,q),(r,m)\}$

(iv) $\{(n,t),(o,p),(m,r),(q,s)\}$

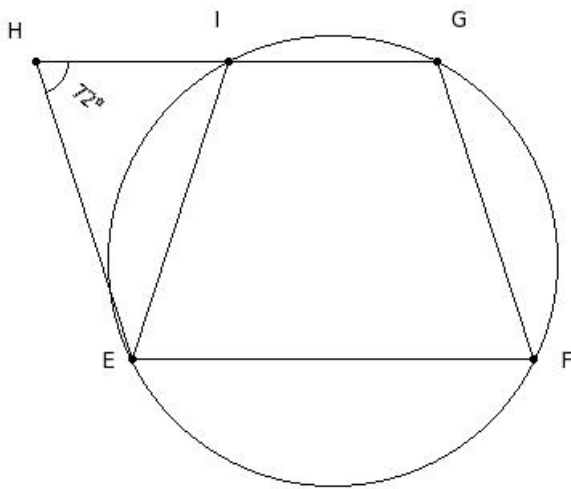
(v) $\{(m,r),(n,q),(o,t),(p,s)\}$

59. GHIJKL is a hexagon inscribed in a circle. Given $\angle GHI = 120^\circ$ & $\angle IJK = 121^\circ$, find $\angle KLG$



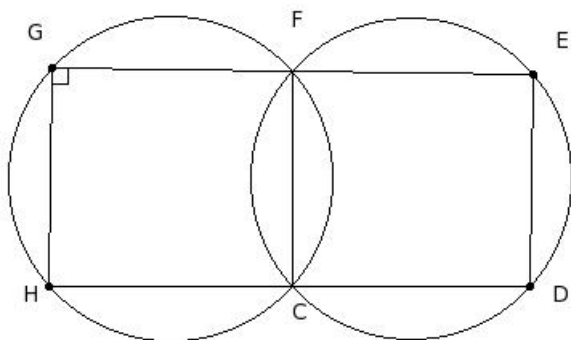
- (i) 129° (ii) 149° (iii) 124° (iv) 134° (v) 119°

60. In the given figure, EFGH is a parallelogram. The circumcircle of $\triangle EFG$ cuts GH at I. Given $\angle EHI = 72^\circ$, find $\angle HEI$



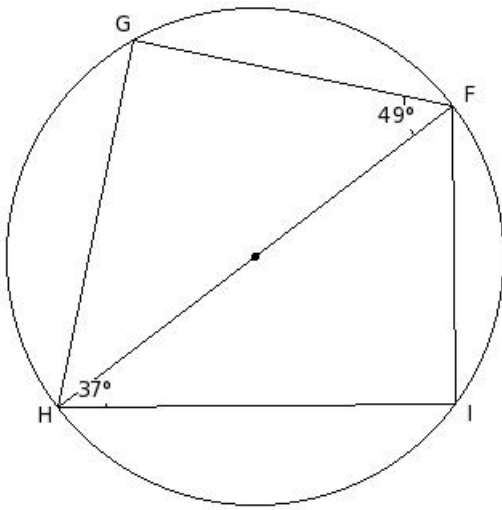
- (i) 66° (ii) 46° (iii) 41° (iv) 36° (v) 51°

61. In the given figure, GE and HD are two lines passing through the points of intersection of the two circles at F and C. If $\angle HGF = 90^\circ$, find $\angle FED$



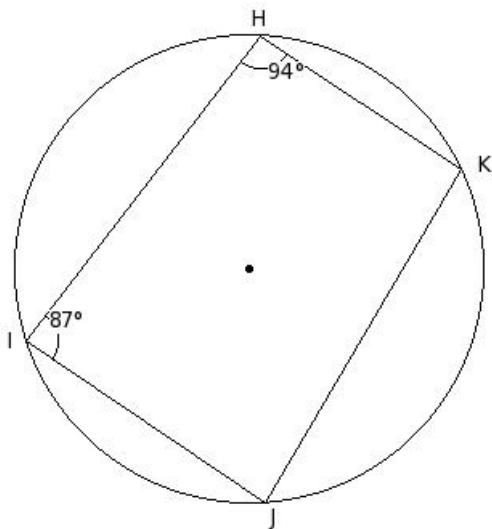
- (i) 120° (ii) 90° (iii) 100° (iv) 105° (v) 95°

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



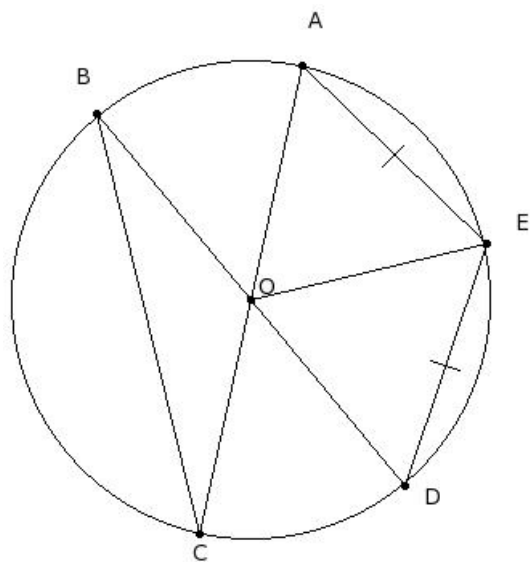
- (i) $F = 104^\circ$, $G = 90^\circ$, $H = 76^\circ$, $I = 90^\circ$
- (ii) $F = 103^\circ$, $G = 90^\circ$, $H = 77^\circ$, $I = 90^\circ$
- (iii) $F = 100^\circ$, $G = 90^\circ$, $H = 80^\circ$, $I = 90^\circ$
- (iv) $F = 101^\circ$, $G = 90^\circ$, $H = 79^\circ$, $I = 90^\circ$
- (v) $F = 102^\circ$, $G = 90^\circ$, $H = 78^\circ$, $I = 90^\circ$

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



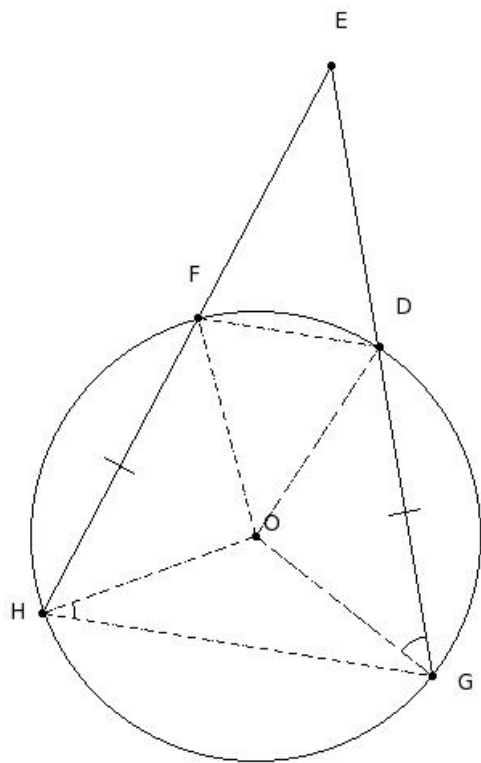
- (i) $J = 86^\circ$, $K = 93^\circ$
- (ii) $J = 85^\circ$, $K = 92^\circ$
- (iii) $J = 87^\circ$, $K = 94^\circ$
- (iv) $J = 84^\circ$, $K = 91^\circ$
- (v) $J = 88^\circ$, $K = 95^\circ$

64. In the given figure, DE & EA are equal length chords, AC and BD are diameters. Given $\angle OEA = 58^\circ$ find, $\angle OBC$



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

65. In the given figure, $\angle OHG = 29^\circ$ & $\angle OGD = 43^\circ$, find $\angle FED$



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

Assignment Key

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

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