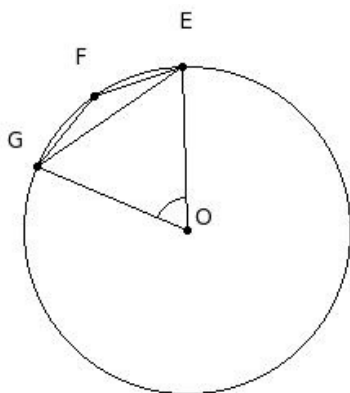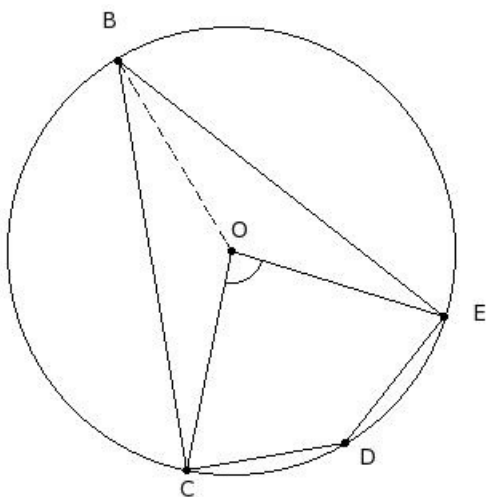1. O is the centre of the circle. If ∠O = 65°, find ∠F
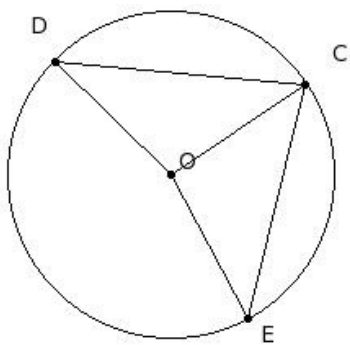

(i) 152.5° (ii) 157.5° (iii) 177.5° (iv) 147.5° (v) 162.5°

2. O is the centre of the circle. If ∠COE = 84°, find ∠B

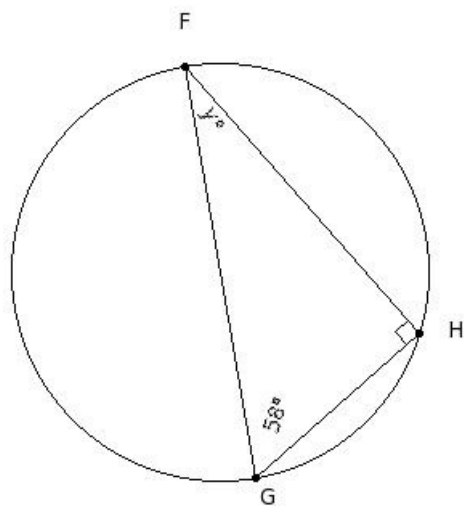(i) 52° (ii) 57° (iii) 42° (iv) 72° (v) 47°

3. O is the centre of the circle. If ∠DOC = 102° and ∠EOC = 96°, find ∠DCE
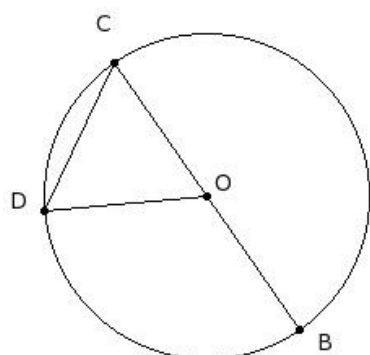

(i) 91° (ii) 111° (iii) 81° (iv) 86° (v) 96°

4. Find the missing angle in the following figure?
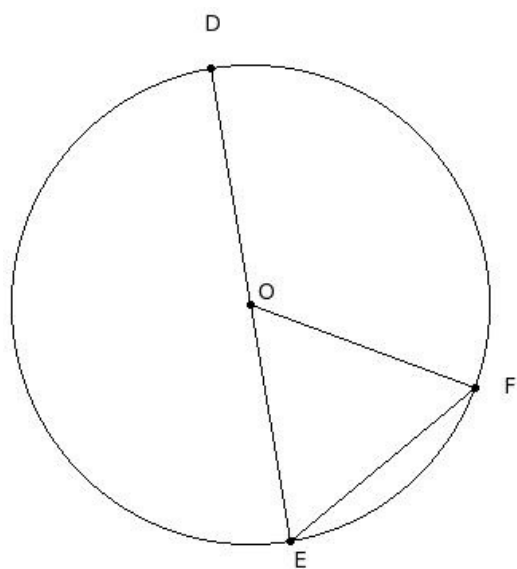

F

$y°$

$58°$

H

G

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

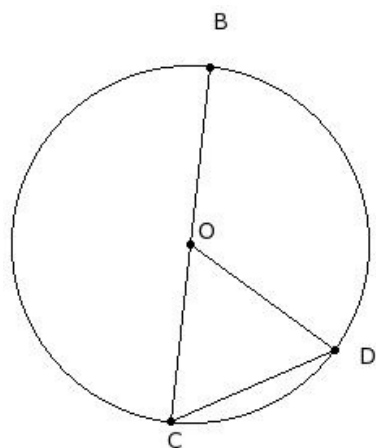5. O is the centre of the circle and OD = CD. Find ∠COD

C

O

D

B

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

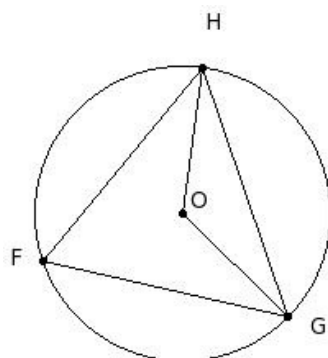6. O is the centre of the circle and OF = EF. Find ∠FOD

D

O

F

E

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

7. O is the centre of the circle and OD = CD. Find reflex $\angle$DOB
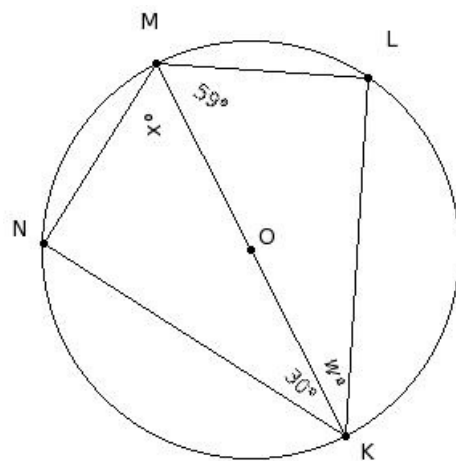

    (i) 250° (ii) 240° (iii) 255° (iv) 245° (v) 270°

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8. O is the centre of the circle. If $\angle F + \angle GOH = 190.5°$, find $\angle GOH$
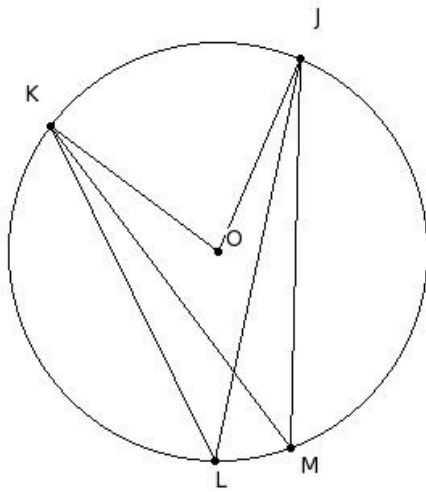

    (i) 127° (ii) 132° (iii) 157° (iv) 137° (v) 142°

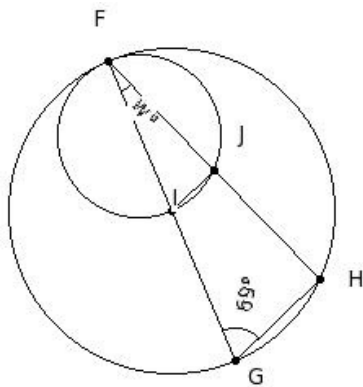9. O is the centre of the circle. If $\angle KML = 59°$ and $\angle MKN = 30°$, find w°, x°

    (i) 31°, 61° (ii) 71°, 41° (iii) 91°, 51° (iv) 61°, 31° (v) 51°, 31°

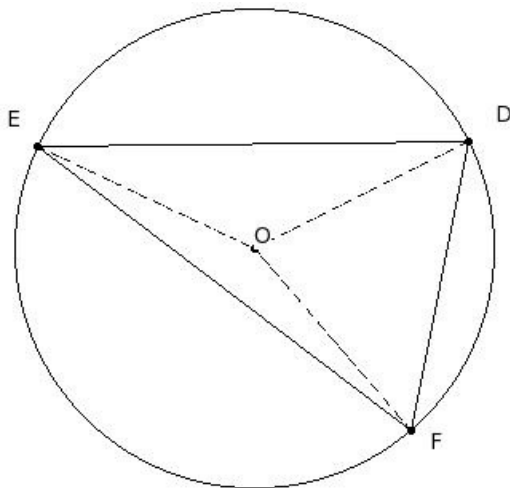10. O is the centre of the circle. If ∠JOK = 76°, find the angle ∠L

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

11. Two circles touch internally. I is the centre of the bigger circle and lies on the smaller circle. If ∠FGH = 69°, find ∠F
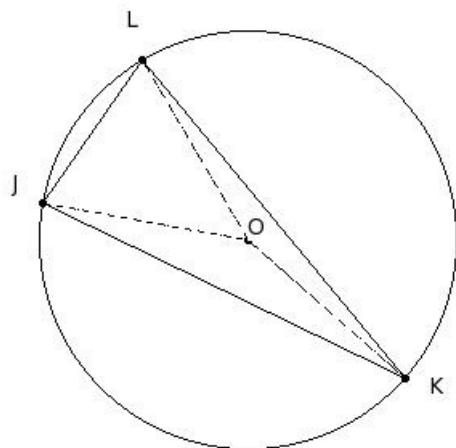

(i) 26° (ii) 21° (iii) 36° (iv) 31° (v) 51°

12. △DEF is inscribed in a circle with centre O. If ∠DOE = 128° and ∠EOF = 156°, find ∠FDE

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

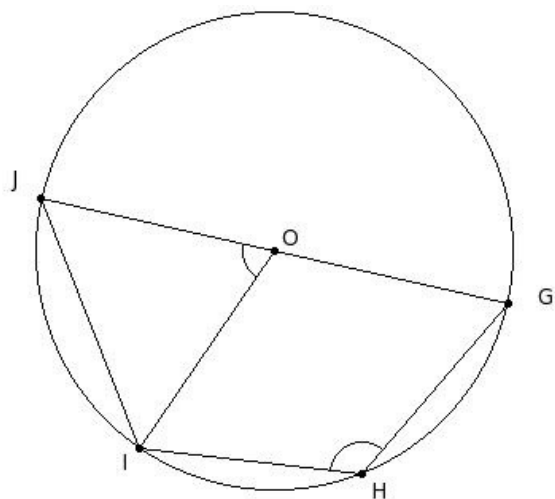13. △JKL is inscribed in a circle with centre O. If ∠JOK = 149° and ∠KOL = 162°, find ∠JKL

(i) 29.5° (ii) 54.5° (iii) 24.5° (iv) 39.5° (v) 34.5°

14. △HIJ is inscribed in a circle with centre O. If ∠HOI = 143° and ∠IOJ = 154°, find ∠IJH
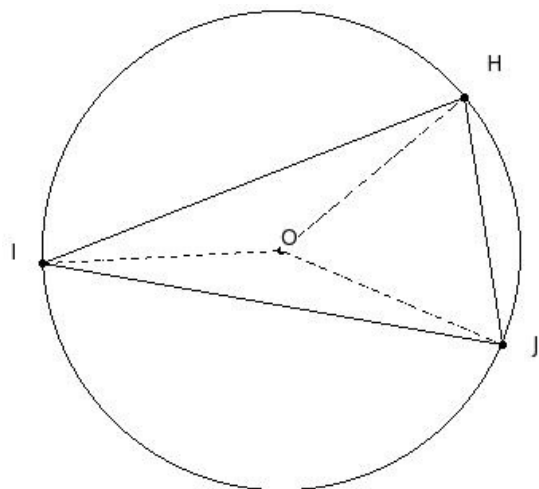
(i) 86.5° (ii) 76.5° (iii) 81.5° (iv) 71.5° (v) 101.5°

15. O is the centre of the circle. If ∠GHI = 124°, find ∠IOJ

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

16. In the given figure, O is the centre of the circle. If ∠GJH = 47° and ∠OGJ = 29°, find ∠IHJ
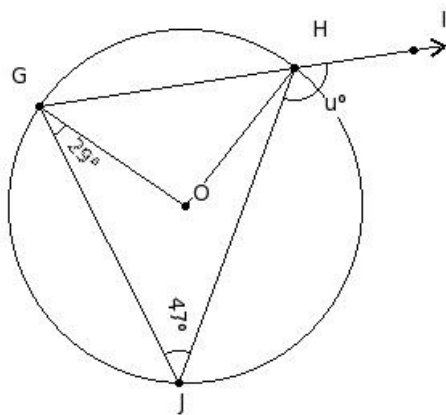
(i) 119° (ii) 129° (iii) 124° (iv) 149° (v) 134°

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17. In the given figure, O is the centre of the circle and CD is a diameter. If ∠DOF = 55°, find ∠CEF
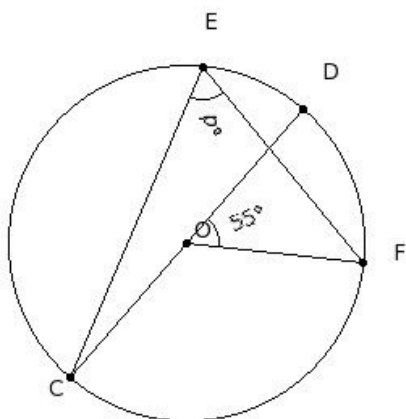
(i) 72.5° (ii) 77.5° (iii) 62.5° (iv) 67.5° (v) 92.5°

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18. In the given figure, O is the centre of the circle and FH is a diameter. If ∠GEF = 61°, find ∠GFH
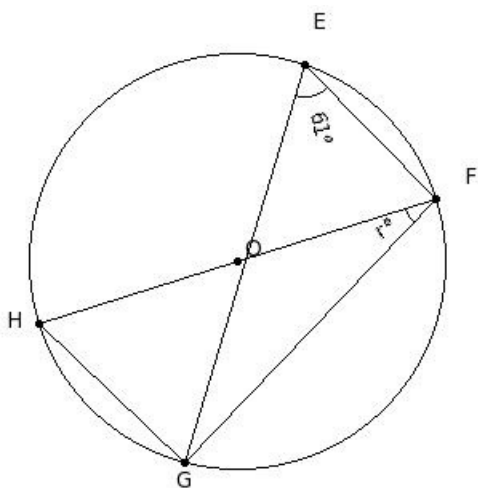
(i) 59° (ii) 39° (iii) 34° (iv) 29° (v) 44°

19. In the given figure, O is the centre of the circle and BD is a diameter. If ∠AOD = 103° and ∠ODC = 63°, find ∠BCA + ∠CBD

(i) 75.5° (ii) 65.5° (iii) 95.5° (iv) 70.5° (v) 80.5°

20. In the given figure, O is the centre of the circle and HJ is a diameter. If ∠GIH = 27° and ∠HGI = 64°, find ∠JHI + ∠GIJ
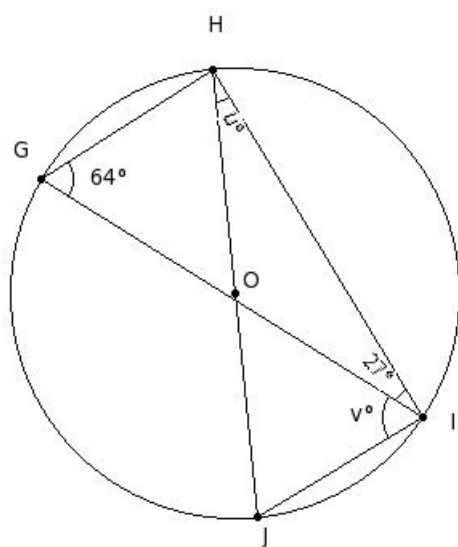
(i) 99° (ii) 89° (iii) 104° (iv) 119° (v) 94°

21. In the given figure, O is the centre of the circle. If ∠FEG = 42° and ∠EGH = 39°, find ∠GIH
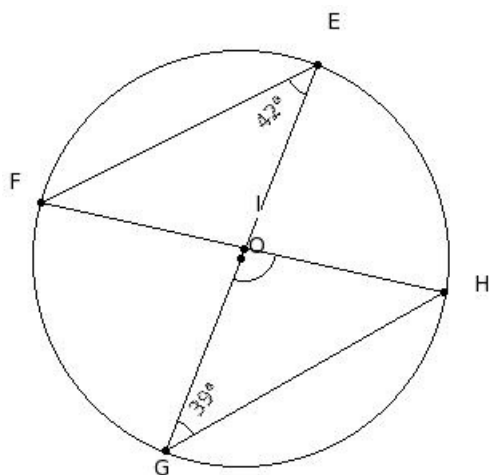
(i) 114° (ii) 99° (iii) 129° (iv) 104° (v) 109°

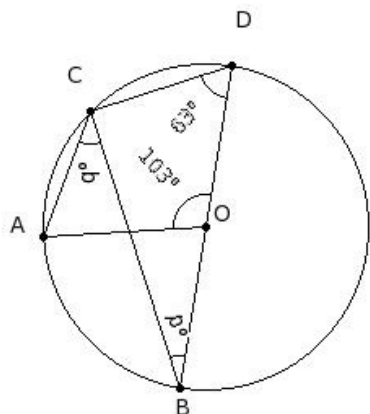22. O is the centre of the circle. If Arc CE = 2 Arc EF and ∠COE = 97°, find ∠CFE
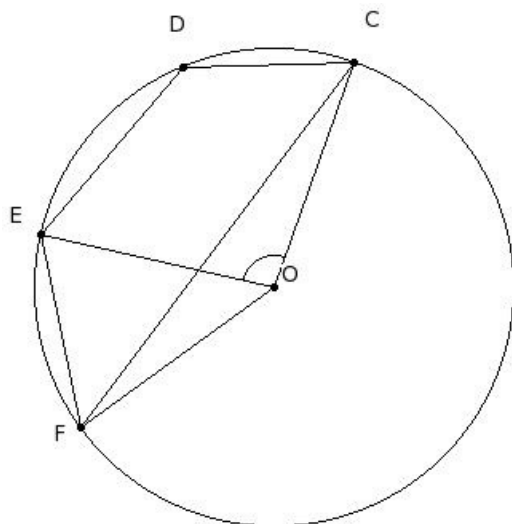
(i) 53.5° (ii) 58.5° (iii) 48.5° (iv) 78.5° (v) 63.5°

23. O is the centre of the circle. If Arc GI = 2 Arc IJ and ∠GOI = 95°, find ∠JGI
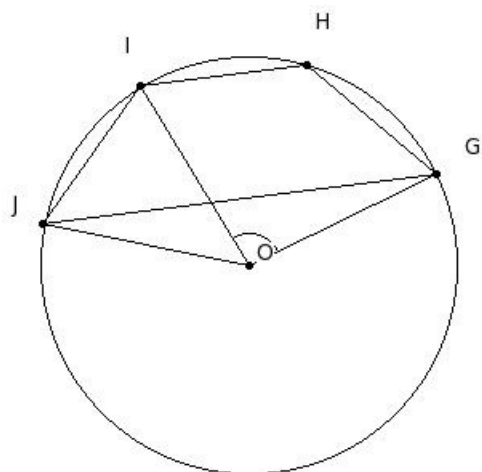
(i) 38.8° (ii) 53.8° (iii) 33.8° (iv) 28.8° (v) 23.8°

24. O is the centre of the circle. If Arc IK = 2 Arc KL and ∠IOK = 74°, find ∠IJK
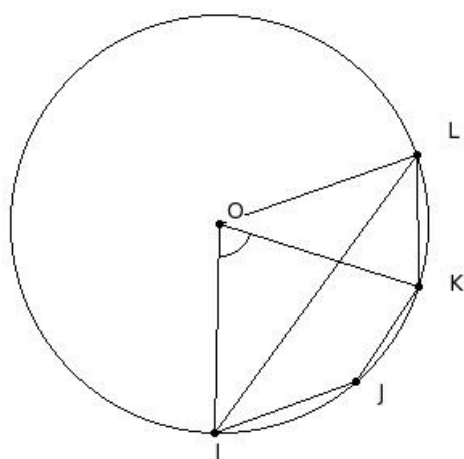
(i) 148° (ii) 143° (iii) 173° (iv) 153° (v) 158°

25. In the given figure, a pentagon is inscribed in a circle with centre O. Given IJ = JK = KL and ∠IJK = 140°. Find ∠KOL
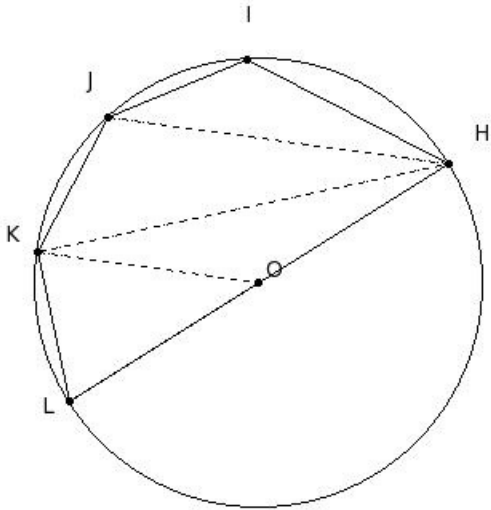
(i) 45° (ii) 55° (iii) 50° (iv) 70° (v) 40°

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26. In the given figure, BC is a side of regular 5-sided polygon and BD is a side of regular 9-sided polygon inscribed in a circle with centre O. Find ∠BOC
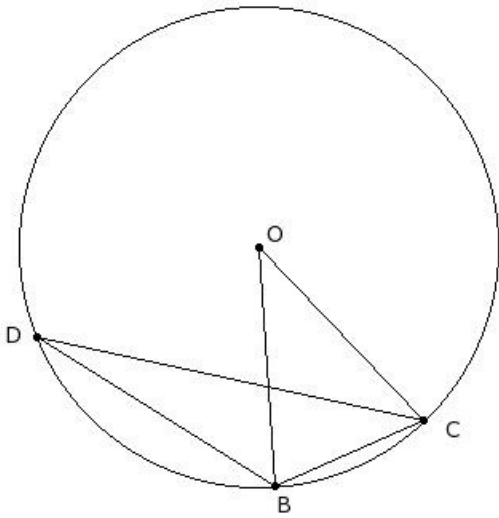
(i) 87° (ii) 72° (iii) 102° (iv) 82° (v) 77°

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27. In the given figure, FG is a side of regular 10-sided polygon and FH is a side of regular 5-sided polygon inscribed in a circle with centre O. Find ∠FHG
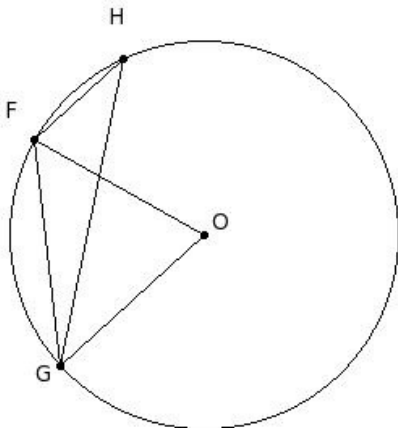
(i) 48° (ii) 18° (iii) 28° (iv) 23° (v) 33°

28. In the given figure, EF is a side of regular 8-sided polygon and EG is a side of regular 6-sided polygon inscribed in a circle with centre O. Find ∠EFG
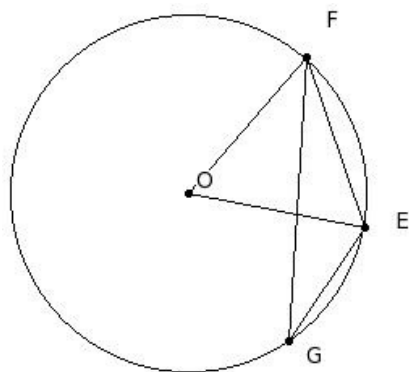
(i) 35° (ii) 30° (iii) 40° (iv) 60° (v) 45°

29. In the given figure, O is the centre of the circle, and OL ⊥ HI. If ∠HIJ = 36°, find ∠HOJ
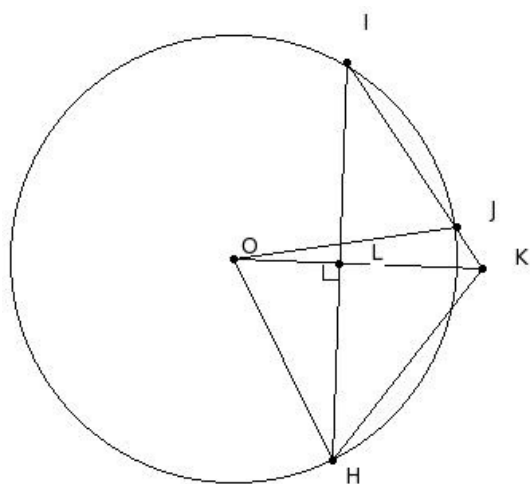
(i) 87° (ii) 72° (iii) 82° (iv) 77° (v) 102°

30. In the given figure, O is the centre of the circle, and OL ⊥ HI. If ∠HIJ = 39°, find ∠OKJ
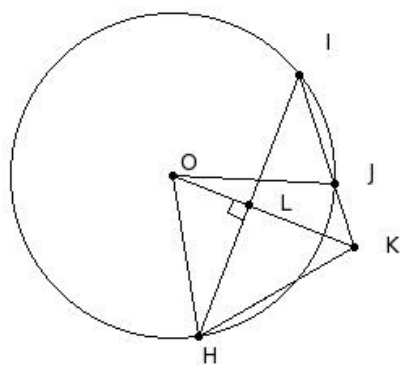
(i) 61° (ii) 81° (iii) 51° (iv) 66° (v) 56°

31. In the given figure, O is the centre of the circle. If ∠CAB = 46.99° and ∠ABC = 59.07°, find the angle ∠ADB

(i) 83.94° (ii) 103.94° (iii) 78.94° (iv) 88.94° (v) 73.94°

32. Which of the following statements are true?

   a) Equal length chords subtend equal angles at the centre of the circle.
   b) No two chords bisects each other.
   c) The farther the chord is from the centre, the larger the angle it subtends at the centre.
   d) Equal length chords are equidistant from the centre of the circle.
   e) The longest chord of the circle passes through the centre of the circle.

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

33. Which of the following statements are true?
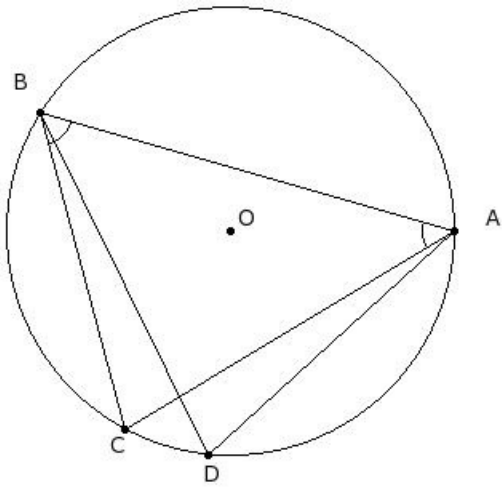
   a) Angles in the opposite segments are complementary.
   b) Angles in the same segment are equal.
   c) Angles in the opposite segments are supplementary.
   d) Angles subtended by equal length arcs in two circles are equal.

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

34. The point of intersection of the angular bisectors of a triangle is
   (i) orthocentre (ii) incentre (iii) centroid (iv) excentre (v) circumcentre

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

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

36. An arc subtends 90° in its alternate segment. The arc is
   (i) major arc (ii) semi-circle (iii) quadrant (iv) major segment (v) minor segment

37. An arc subtends 127° in its alternate segment. The arc is
   (i) major segment (ii) minor arc (iii) minor segment (iv) quadrant (v) major arc

38. An arc subtends 35° in its alternate segment. The arc is
   (i) minor segment (ii) minor arc (iii) major segment (iv) major arc (v) semi-circle

39. An arc subtends 67° in its alternate segment. Its corresponding major arc subtends what angle in its (major arc) alternate segment?

   (i) 128° (ii) 113° (iii) 123° (iv) 143° (v) 118°

40. An arc subtends 68° in its alternate segment. The angle made by its corresponding major arc at the centre is

(i) 239° (ii) 254° (iii) 229° (iv) 224° (v) 234°

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

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

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

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

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

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

44. Angle subtended in the major segment is

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

45. If the radius of the circumcircle is half the length of a side of the triangle, then the triangle is

(i) equilateral triangle (ii) obtuse angled triangle (iii) acute angled triangle (iv) right angle triangle

46. In the given figure, DE & FG are diameters of the circle. If ∠DEF = 54° find, ∠EOF
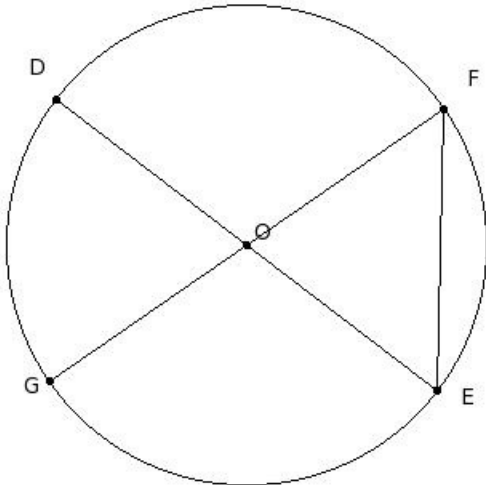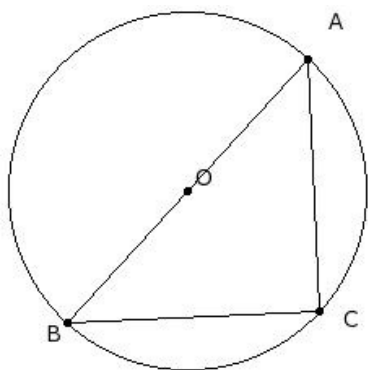

(i) 72° (ii) 102° (iii) 87° (iv) 77° (v) 82°

47. In the given figure, IJ & KL are diameters of the circle. If ∠ILK = 24°, find ∠OKJ
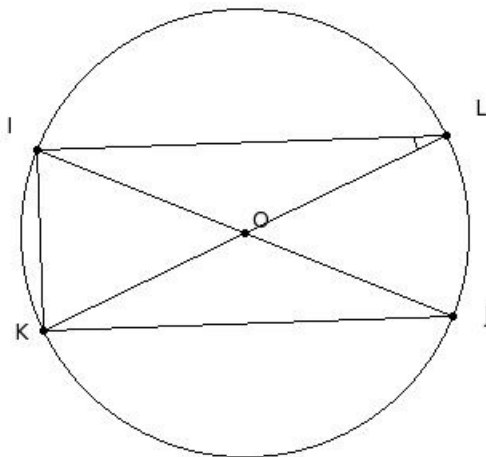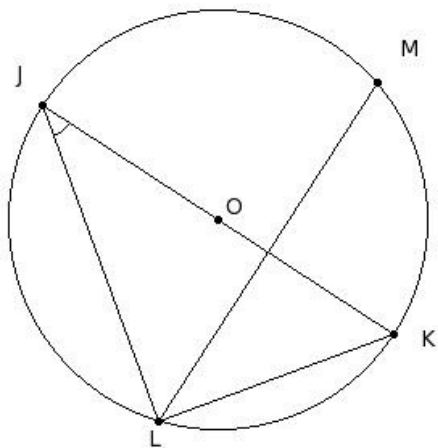

(i) 54° (ii) 24° (iii) 29° (iv) 34° (v) 39°

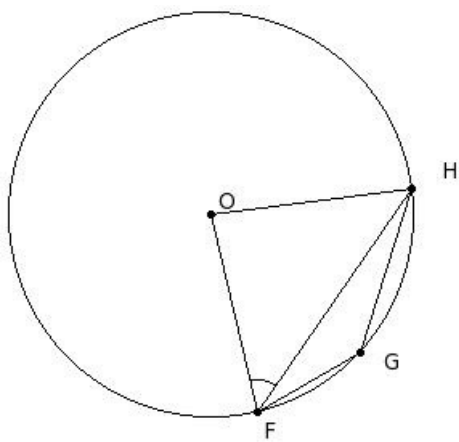48. In the given figure AC & BC are equal length chords of the circle. Find ∠CAB

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

49. In the given figure, JK is a diameter of the circle with centre O. If ∠KJL = 36.75° and KL = KM, find ∠MLJ
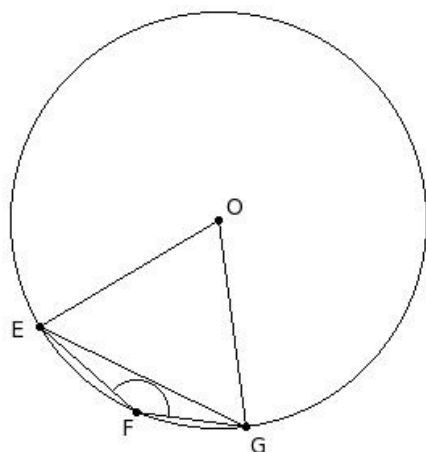

(i) 83.25° (ii) 63.25° (iii) 53.25° (iv) 68.25° (v) 58.25°

50. In the given figure, O is the centre of the circle. If ∠OFH = 48°, find ∠G

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

51. In the given figure, O is the centre of the circle. If ∠EFG = 146°, find ∠OEG

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

52. In the given figure, O is the centre of the circle and BD is the tangent at C. If ∠CDE = 38°, ∠DCE = 37°, find ∠FCE
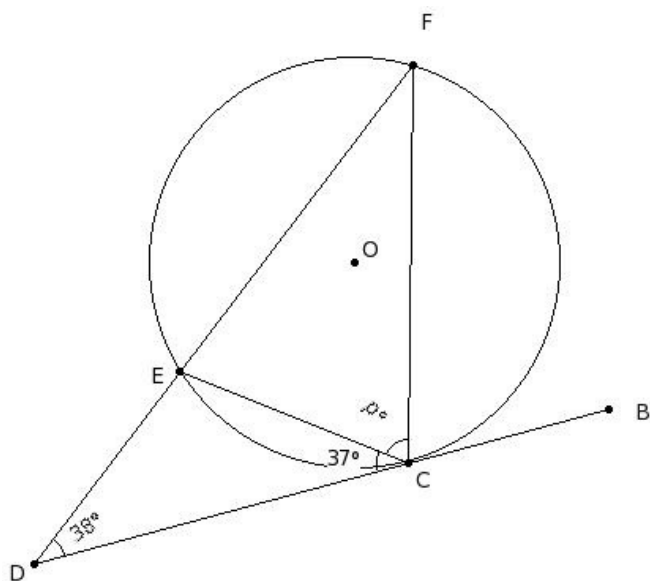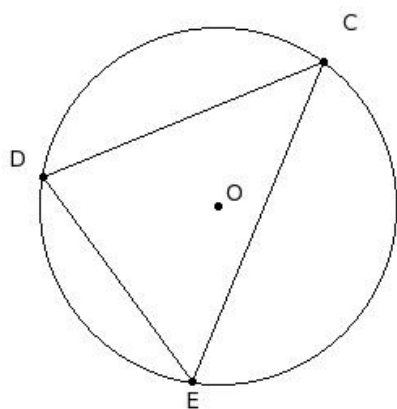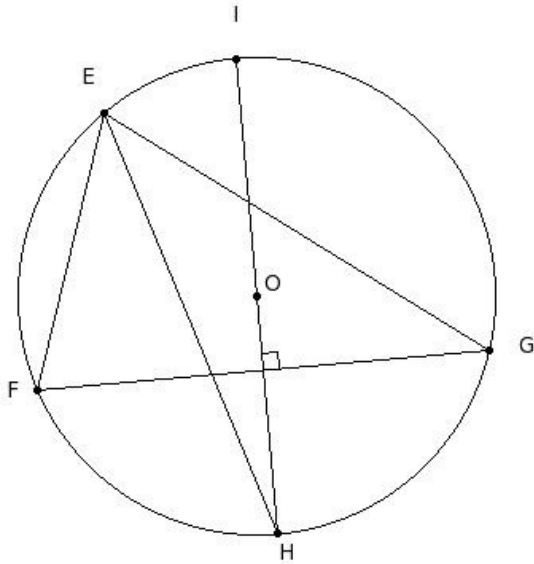

(i) 68° (ii) 83° (iii) 78° (iv) 98° (v) 73°

53. O is the centre of the circle. If ∠DEC = 58.5°, find the angle ∠ODC
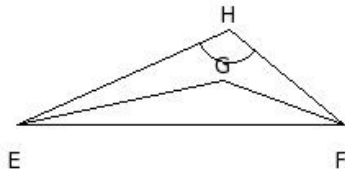

(i) 41.5° (ii) 31.5° (iii) 36.5° (iv) 61.5° (v) 46.5°

54. HI is the perpendicular bisector of side FG of △EFG. Given ∠EFG = 71° and ∠HEG = 36° , find ∠EGF

(i) 42° (ii) 37° (iii) 47° (iv) 52° (v) 67°

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55. In the given figure, △HEF is a scalene triangle. GE bisects ∠HEF. Similarly FG bisects ∠EFH. Given ∠FHE = 116°, find ∠FGE

(i) 163° (ii) 148° (iii) 158° (iv) 153° (v) 178°

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56. In the given figure, △GCD is a scalene triangle. EC & FC trisect ∠GCD. Similarly DE & DF trisect ∠CDG. Given ∠DGC = 114°, find ∠DEC
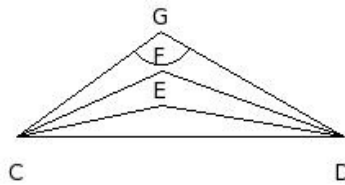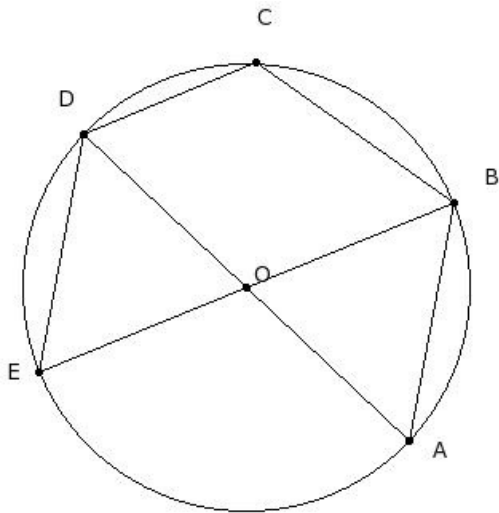

(i) 173° (ii) 168° (iii) 163° (iv) 188° (v) 158°

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57. In the given figure, △FBC is a scalene triangle. DB & EB trisect ∠FBC. Similarly CD & CE trisect ∠BCF. Given ∠CFB = 102°, find ∠CEB
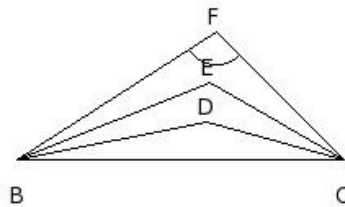
(i) 143° (ii) 133° (iii) 158° (iv) 138° (v) 128°

58. In the given figure, AB , BC , CD and DE are chords and AD , BE are diameters passing through the centre O. If ∠AOB = 65°. Find ∠BCD

(i) 122.5° (ii) 127.5° (iii) 137.5° (iv) 132.5° (v) 152.5°

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

a) ∠JMK = 30°
b) ∠JOL = 120°
c) ∠IKJ = 60°
d) ∠NLK = 90°
e) ∠ION = 60°
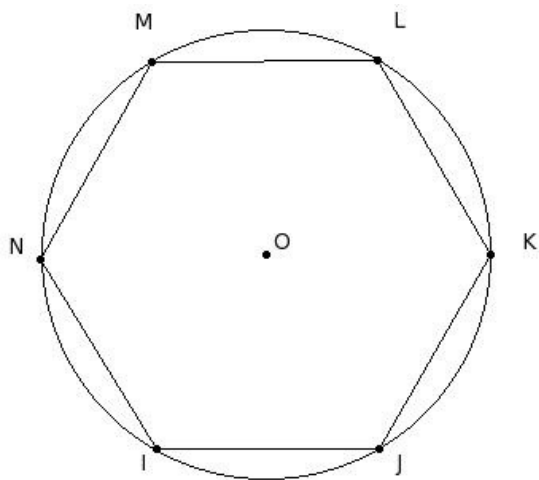
(i) {c,a} (ii) {c,e,a} (iii) {a,b,d,e} (iv) {c,d} (v) {c,b}

60. In the given figure, FGHIJ is a regular pentagon . Find ∠FJH

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

61. Which of the following statements are true?

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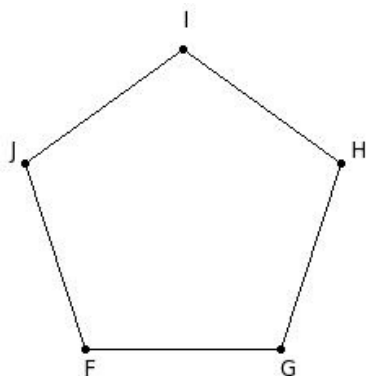   c) If two chords are equal, then they are equidistant from the centre of the circle.
   d) The angle subtended in a semicircle is a right angle.
   e) Angle subtended by the major arc at the centre is acute.

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

62. In triangle BCD, if a circle is drawn with CD as diameter and if it passes through B it is a

   (i) right angle triangle (ii) equilateral triangle (iii) acute angled triangle (iv) obtuse angled triangle

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

   a) $\angle B + \angle COD = 180°$
   b) $\angle B + \angle OCD = 90°$
   c) $\angle B + \angle OCD + \angle ODC = 2\angle B$
   d) $\angle B + \angle ODC = 90°$
   e) $\angle B + \angle OCD = 120°$
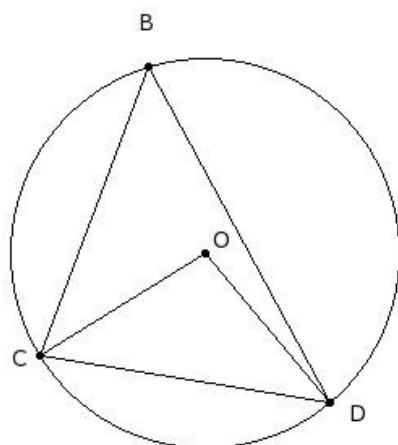
   (i) {a,b} (ii) {e,a,b} (iii) {c,d,b} (iv) {c,d} (v) {b,d}

64. In the given figure, the bisectors of $\angle B$, $\angle C$ & $\angle D$ of $\triangle BCD$ meet the circumcircle at E, F & G. If $\angle B = 56°$, find $\angle E$
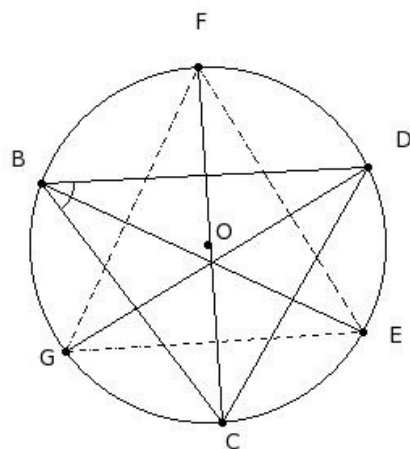
   (i) 72° (ii) 62° (iii) 67° (iv) 92° (v) 77°

65. In the given figure, which of the following angle pairs are equal?
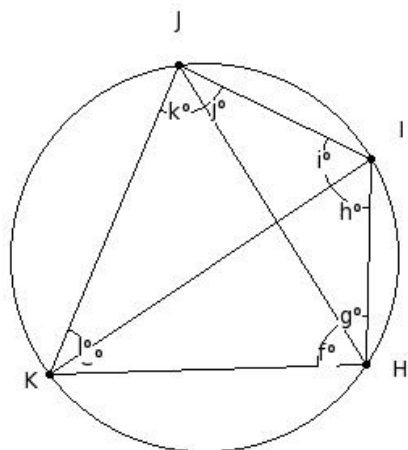
(i) {(i,j),(f,h),(k,l),(e,g)} (ii) {(g,j),(l,k),(i,h),(e,f)} (iii) {(e,j),(f,i),(g,l),(h,k)} (iv) {(j,i),(l,f),(e,k),(h,g)}

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

Assignment Key

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