Name: Circles - Tangent Properties

Chapter: Circles

Grade: CBSE Grade X

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1. Two circles with radii R and r touch internally. If the distance between their centres is d, then

(i) d < R - r (ii) d = R - r (iii) d > R - r (iv) d = R + r (v) d < R + r

2. The angle between a tangent to a circle and the radius drawn at the point of contact is

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

3. If two circles of radii 13 cm and 3 cm touch externally, the distance between their centres is

(i) 17 cm (ii) 15 cm (iii) 18 cm (iv) 16 cm (v) 14 cm

4. If two circlestouch internally, the number of their common tangents is

(i) 0 (ii) 4 (iii) 1 (iv) (-1) (v) 2

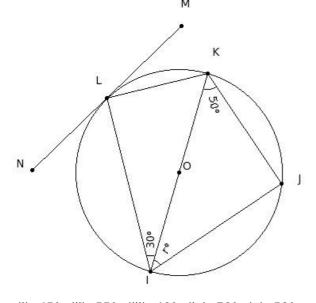
5. If two circles intersect, the number of their common tangents is

(i) 3 (ii) 0 (iii) 1 (iv) 5 (v) 2

6. If two circles touch externally, the number of their common tangents is

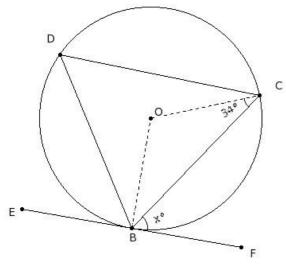
(i) 4 (ii) 2 (iii) 0 (iv) 5 (v) 3

7. In the given figure, O is the centre of the circle and MN is the tangent at L. If \angle KIL = 30° and \angle IKJ = 50°, find \angle KIJ



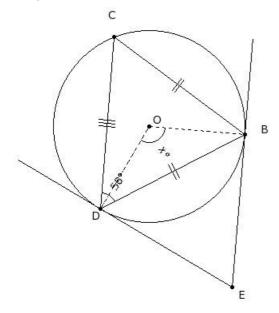
(i) 45° (ii) 55° (iii) 40° (iv) 70° (v) 50°

8. In the given figure, O is the centre of the circle and EF is the tangent at B. If \angle OCB = 34°, find \angle FBC



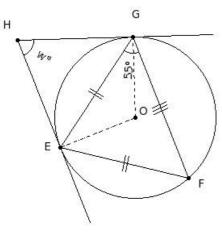
(i) 61° (ii) 56° (iii) 71° (iv) 66° (v) 86°

9. In the given figure, O is the centre of the circle and the tangents BE and DE meet at point E. If \angle CDB = 58°, find \angle BOD



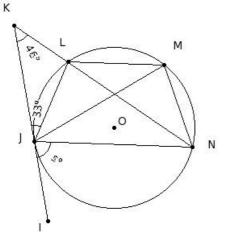
(i) 126° (ii) 121° (iii) 131° (iv) 116° (v) 146°

In the given figure, O is the centre of the circle and the tangents EH and GH meet at point H. If \angle FGE = 55°, find \angle GHE

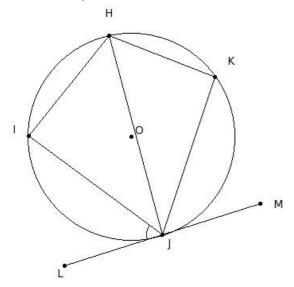


(i) 70° (ii) 75° (iii) 85° (iv) 80° (v) 100°

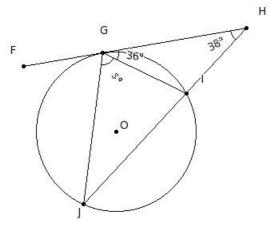
11. In the given figure, O is the centre of the circle and IK is the tangent at J. If \angle JKL = 46°, \angle KJL = 33°, find \angle NJI



- (i) 89° (ii) 94° (iii) 79° (iv) 84° (v) 109°
- In the given figure, HIJK is a cyclic quadrilateral such that JH bisects \angle KHI and LM is the tangent at J. If \angle JHI = 54°, find \angle LJI

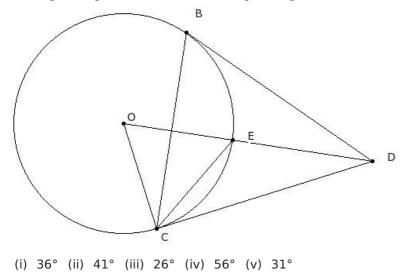


- (i) 59° (ii) 69° (iii) 64° (iv) 84° (v) 54°
- 13. In the given figure, O is the centre of the circle and FH is the tangent at G. If \angle GHI = 38°, \angle HGI = 36°, find \angle JGI

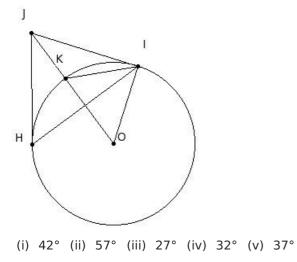


(i) 100° (ii) 70° (iii) 85° (iv) 80° (v) 75°

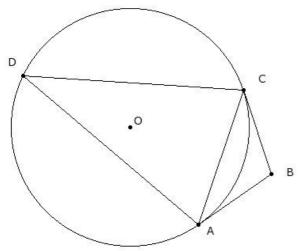
14. In the given figure, DB and DC are tangent segments to the circle with centre O. Given \angle CDE = 26°, find \angle BCO



15. In the given figure, JH and JI are tangent segments to the circle with centre O. Given \angle IJK = 36°, find \angle HIK

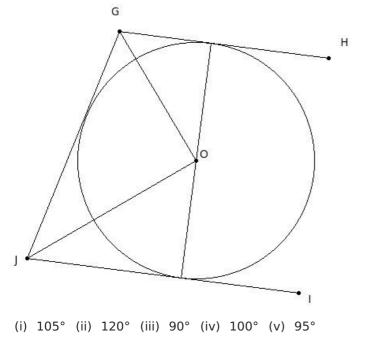


16. O is the centre of the circle. AB and CB are tangents to the circle. If \angle CDA = 36.5°, find \angle ABC

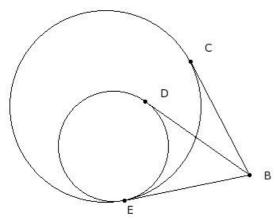


(i) 122° (ii) 137° (iii) 117° (iv) 107° (v) 112°

17. In the given figure, GH and IJ are parallel tangents to the circle with centre O. GJ is another tangent meeting GH and IJ at G and J. Find ∠GOJ

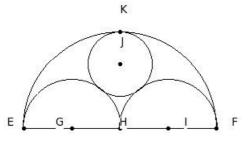


In the given figure, BE is the common tangent to the two circles. BC & BD are also tangents. Given BC = 16 cm, find BD



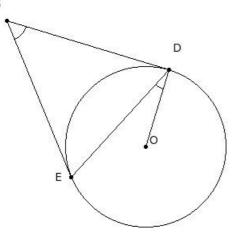
(i) 17 cm (ii) 14 cm (iii) 16 cm (iv) 18 cm (v) 15 cm

EF is a line segment and H is its mid-point. Three semi-circles are drawn with EH , HF and EF as diameters. G , I 19. and H respectively are the centres of these semi-circles. A new circle is drawn touching these three semi-circles. Find its radius, given EG = 6 cm

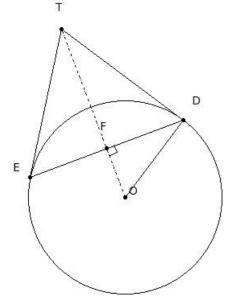


(i) 4.00 cm (ii) 5.00 cm (iii) 3.00 cm (iv) 6.00 cm (v) 2.00 cm

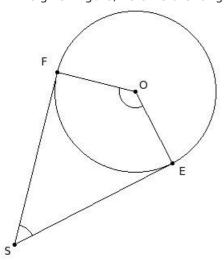
20. In the given figure, DS & ES are tangents to the circle with centre O. Given $\angle D = 26^{\circ}$, find $\angle S$



- (i) 67° (ii) 57° (iii) 52° (iv) 82° (v) 62°
- 21. In the given figure, DT & ET are tangents to the circle with centre O. Given OD = 12 cm and DE = 20 cm, find DT



- (i) 16.09 cm (ii) 20.09 cm (iii) 18.09 cm (iv) 19.09 cm (v) 17.09 cm
- 22. In the given figure, ES & FS are tangents to the circle with centre O. Given \angle EOF = 131°, find \angle ESF



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

Assignment Key					
1) (ii)	2) (iii)	3) (iv)	4) (iii)	5) (v)	6) (v)
7) (iii)	8) (ii)	9) (iv)	10) (i)	11) (iii)	12) (v)
13) (ii)	14) (iii)	15) (iii)	16) (iv)	17) (iii)	18) (iii)
19) (i)	20) (iii)	21) (iii)	22) (v)		

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