LINE ANGLE AND TRIANGLE

1. Two line segments PQ and RS intersect at X in such a way that XP=XR. If $\angle PSX = \angle RQX$, then one must have

   (a) PR=QS (b) PS=RQ (c) $\angle XSQ = \angle XRP$ (d) ar (Δ PXR)=ar (Δ QXS)

2. In a Δ ABC, $\overline{AB}^2 + \overline{AC}^2 = \overline{BC}^2$ and $\overline{BC} = \sqrt{2}\,\overline{AB}$, then $\angle$ABC is :

   (a) 30º (b) 45º (c) 60º (d) 90º

3. In triangle PQR, points A, B and C are taken on PQ. PR and QR respectively such that QC=AC and CR=CB. If $\angle QPR = 40º$. Then $\angle ACB$ is equal to :

   (a) 140º (b) 40º (c) 70º (d) 100º

4. The internal bisectors of $\angle ACB$ of Δ ABC meet each other at O. If $\angle BOC = 110º$, then $\angle BAC$ is equal to

   (a) 40º (b) 55º (c) 90º (d) 110º

5. Ac is the diameter of a circumcircle of Δ ABC. Chord ED is parallel to the diameter AC. If $\angle CBE = 50º$, then the measure of $\angle DEC$ is

   (a) 50º(b) 90º (c) 60º (d) 40º

6. O is the incentre of Δ ABC and $\angle BOC = 110º$. Find $\angle BAC$.

   (a) 40º (b) 45º (c) 50º (d) 55º

7. In Δ ABC, $\angle B = 60$ °C=40º. If AD and AE be respectively the internal bisector of $\angle A$ and perpendicular on BC, then the measure of $\angle DAE$ is

   (a) 5º (b) 10º (c) 40º (d) 60º

8. A circle (with centre at O) is touching two intersecting lines AX and BY. The two points of contact A and B subtend an angle of 65º at any point C on the circumference of the circle. If P is the point of intersection of the two lines, then the measure of $\angle APO$ is

   (a) 25º (b) 65º (c) 90º (d) 40º

9. Internal bisectors of $\angle B$ and $\angle C$ of Δ ABC intersect at O. If $\angle BOC = 102º$, then the value of $\angle BAC$ is

   (a) 12º (b) 24º (c) 48º (d) 60º

10. ABCD is a cyclic quadrilateral and O is the centre of the circle. If $\angle COD = 140°$ and $\angle BAC = 40°$, then the value of $\angle BCD$ is equal to

    (a) 70º (b) 90º (c) 60º (d) 80º

11. A chord of a circle is equal to its radius. The angle subtended by this chord at a point on the circumference in the major segment is

    (a) 60º (b) 120º (c) 90º (d) 30º

12. The angle between the external bisectors of two angles of a triangle is 60º. Then the third angle of the triangle is

    (a) 40º (b) 50º (c) 60º (d) 80º

13. If the internal bisectors of the $\angle ABC$ and $\angle ACB$ of Δ ABC meet at O and also $\angle BAC = 80º$, then $\angle BOC$ is equal to

    (a) 50º (b) 160º (c) 40º (d) 130º

14. Internal bisectors of angles $\angle B$ and $\angle C$ of a triangle ABC meet at O. If $\angle BAC = 80º$, then the value of $\angle BOC$ is

    (a) 120º (b) 140º (c) 110º (d) 130º

15. If G be the centroid of a triangle ABC such that AG=BC, then the magnitude of $\angle BGC$ is

    (a) 60º (b) 90º (c) 120º (d) 135º

16. O is the centre and arc ABC subtends an angle of 130º at O. AB is etended to P. Then $\angle PBC$ is

    (a) 75º (b)70º (c) 65º (d) 80º

17. In a Δ ABC and D $\angle A : \angle B : \angle C = 2 : 3 : 4$ one line CD $\parallel$ AB is find the value $\angle ACD$

    (a) 40° (b) 60° (c) 80° (d) 20°

18. In triangle ABC, $\angle BAC = 75º$, $\angle ABC = 45º$. $\overline{BC}$ is produced to D. If $\angle ACD = x º$, then $\frac{x}{3}\%$ of 60º is

    (a) 30º (b) 48º (c) 15º (d) 24º

19. In a Δ ABC, AB=AC and BA is produced to D such that AC=AD. Then the $\angle BCD$ is

    (a) 100º (b) 60º (c) 80º (d) 90º

20. In Δ ABC, $\angle A + \angle B = 65º$, $\angle B + \angle C = 140º$, then find $\angle B$

    (a) 40º (b)25º (c) 35º (d) 20º

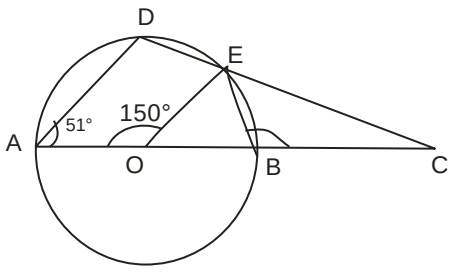
21. In a triangle ABC, $\angle A = 90º$, $\angle C = 55º$; $\overline{AD} \perp \overline{BC}$. What is the value of $\angle BAD$?

    (a) 35º (b) 60º (c) 45º (d) 55º

22. If O be the circumcentre of a triangle PQR and $\angle QOR = 110º$, $\angle OPR = 25º$, then the measure of $\angle PRQ$ is

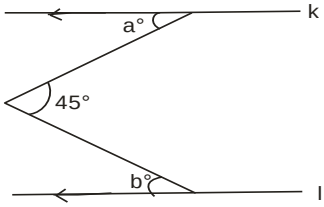
    (a) 65º (b) 50º (c) 55º (d) 60º

23. In the following figure, AB be diameter of a circle whose centre is O. If $\angle AOE = 150º$, $\angle DAO = 51º$ then the measure of $\angle CBE$ is



    (a) 115º (b) 110º (c) 105º (d) 120º

24. In the given figure line k and l are parallel. The value of $a º + b º$ is figures



(a) 45º (b) 100º (c) 180º (d) 360º

25. If the orthocentre and the centroid of a triangle are the same then the triangle is :

(a) scalene (b) right angled (c) equilateral (d) obtuse angled

26. The in radius of an equilateral triangle is of length 3 cm. Then the length of each of its medians is

(a) 12cm (b) 9/2 cm (c) 4 cm (d) 9 cm

27. In a triangle, if three altitudes are equal, then the triangle is

(a) obtuse (b) equilateral (c) right (d) isosceles

28. If area of an equilateral triangle is a and height b, then value of b^2/a is :

(a) 3 (b) 1/3 (c) $\sqrt{3}$ (d) $\frac{1}{\sqrt{3}}$

29. The side QR of an equilateral triangle PQR is produced to the point S in such a way that QR=RS and P is joined to S. Then the measure of $\angle$PSR is

(a) 30º (b) 15º (c) 60º (d) 45º

30. ΔABC is an isosceles a triangle and $\overline{AB} = \overline{AC} = 2a$ unit $\overline{BC} = a$ unit. Draw $\overline{AD} \perp \overline{BC}$, and find the length of $\overline{AD}$.

(a) $\sqrt{15}$ a unit (b) $\frac{\sqrt{15}}{2}$ a unit (c) $\sqrt{17}$ a unit (d) $\frac{\sqrt{17}}{2}$ a unit C=1/2 PB

31. If ΔABC is an isosceles triangle with $\angle$C=90º and AC=5 cm, then AB is

(a) 5 cm (b) 10 cm (c) $5\sqrt{2}$ cm (d) 2.5

32. ABC is an isosceles triangle with AB=AC. A circle through B touching AC at the middle point intersects AB at P. Then AP:AB is

(a) 4:1 (b) 2:3 (c) 3:5 (d) 1:4

33. ABC is an isosceles triangle such that AB=AC and $\angle$B=35º. AD is the median to the base BC. Then $\angle$BAD is

(a) 70º (b) 35º (c) 110º (d) 55º

34. ABC is an isosceles triangle with AB=AC. The side BA is produced to D such that AB=AD if $\angle$ABC=30º, then $\angle$BCD is equal to

(a) 45º (b) 90º (c) 30º (d) 60º

35. Inside a triangle ABC, a straight line parallel to BC intersects AB and AC at the points P and Q respectively. If AB=3 PB, then PQ:BC is

(a) 1:3 (b) 3:4 (c) 1:2 (d) 2:3

36. For a triangle, base is $6\sqrt{3}$ cm and two base angles are 30º and 60º. Then height of the triangle is

(a) $3\sqrt{3}$ cm (b) 4.5 cm (c) $4\sqrt{3}$ cm (d) $2\sqrt{3}$ cm

37. In a triangle ABC, $\angle$BAC=90º and AD is perpendicular to BC. If AD=6 cm and BD=4 cm, then the length of BC is

(a) 8 cm (b) 10 cm (c) 9 cm (d) 13 cm

38. In a right angled triangle, the product of two sides is equal to half of the square of the third side i.e., hypotenuse. One of the acute angles must be

(a) 60º (b) 30º (c) 45º (d) 15º

39. In ΔABC, $\angle$A=90º and AD $\perp$ BC where D lies on BC. If BC=8cm, AC=6 cm, then ΔABC : ΔACD=?

(a) 4:3 (b) 25:16 (c) 16:9 (d) 25:9

40. The areas of two similar triangles ABC and DEF are 20 cm^2 and 45 cm^2 respectively. If AB=5 cm, then DE is equal to :

(a) 6.5 cm (b) 7.5 cm (c) 8.5 cm (d) 5.5 cm

41. If ΔABC is similar to ΔDEF such that BC=3 cm, EF=4 cm and area of ΔABC=54cm^2, then the area of ΔDEF is

(a) 66cm^2 (b) 78cm^2 (c) 96cm^2 (d) 54 cm^2

42. Two triangles ABC and DEF are similar to each other in which AB=10 cm, DE=8 cm. Then the ratio of the areas of triangles ABC and DEF is

(a) 4:5 (b) 25:16 (c) 64:125 (d) 4:7

43. In ΔABC, the internal bisectors of $\angle$ABC and $\angle$ACB meet at I and $\angle$BAC=50º. The measure of $\angle$BIC is

(a) 105º (b) 115º (c) 125° (d) 130º

44. The exterior angles obtained on producing the base BC of a triangle ABC in both ways are 120º and 105º, then the vertical $\angle$A of the triangle is of measure

(a) 36º (b) 40º (c) 45º (d) 55º

45. If in triangle ABC, Base BC is increase in two side, what is the value of outer triangle B and C

(a) π-A (b) π+A (c) $\frac{\pi}{2}+A$ (d) $\pi-\frac{A}{2}$

46. O is the center of triangle ABC and $\angle$A=30º. Then what is the value of $\angle BOC$

(a) 100º (b) 105º (c) 110º (d) 90º