MATHS

BOOKS - TARGET PUBLICATION

MODEL QUESTION PAPER

Questions

1. Write the converse statement of the following statement : If a quadrilateral is a rhombus then its diagonals are perpendicular

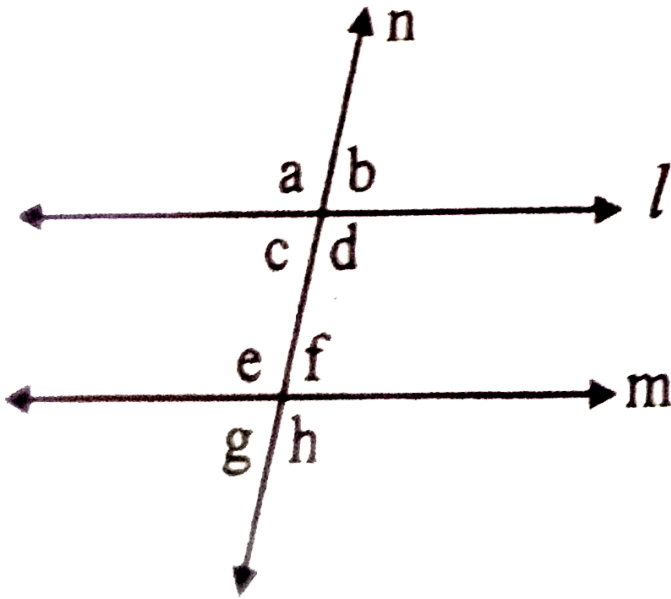bisectors of each other . Also state whether the converse statement is true .

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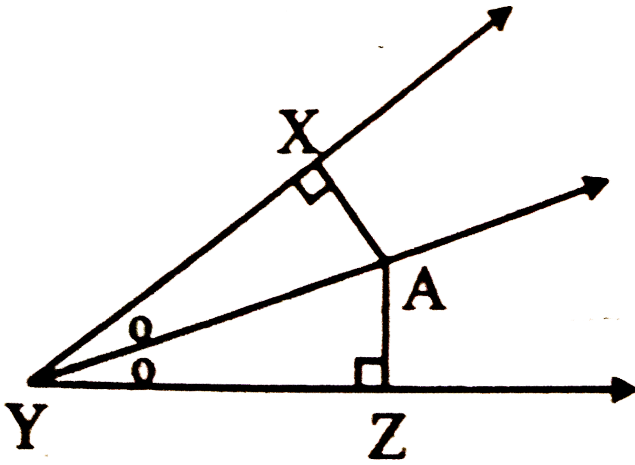**2.** Write the equation of a line parallel to X-axis and at a distance 3 cm above it.

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3. As shown in the figure, if lines *l* and m are parallel, then write algebraic equations using the property of interior angles.

4. In the given figure, point A is on the bisector

of $\angle XYZ$. If $AX = 5.5cm$, then find AZ.

5. If the diagonals of a quadrilateral are

congruent, then what type of quadrilateral is it

?

6. Find the value of $\dfrac{\sin 32°}{\cos 58°}$

7. Curved surface area of a cylinder is $440cm^2$ and the radius of its base is 7 cm. Find the height of the cylinder.

8. If the two sides and an angle of a triangle is given, it is possible to draw that triangle' Is the above statement correct ? Justify.
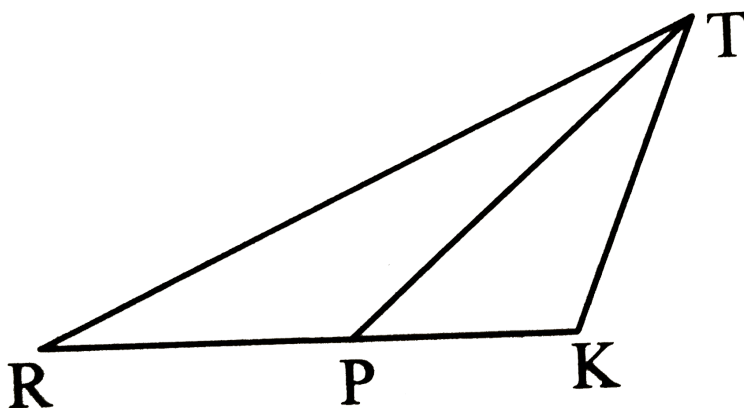
9. Draw a circle of any radius. Draw diameter PQ. Take 3 points S, T and U any where on the circle. Measure $\angle PSQ, \angle PTQ$ and $\angle PUQ$. What do you observe?

10. In the figure, RP : PK = 11 : 8, then $\frac{A(\triangle TRP)}{A(\triangle TPK)} =$

A. $11:8$

B. $8:11$

C. $19:11$

D. $11:19$

Answer:

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11. If $\tan\theta = \dfrac{3}{4}$, then $\cos^2\theta - \sin^2\theta =$

A. $\dfrac{3}{25}$

B. $\dfrac{4}{25}$

C. $\dfrac{7}{25}$

D. $\dfrac{9}{25}$

Answer:

12. The ratio of circumference and area of a circle is $2:7$. Find its circumference.

A. 14π

B. $\dfrac{7}{\pi}$

C. 7π

D. $\dfrac{14}{\pi}$

Answer:

13. Find the curved surface area of a cone of radius 7 cm and heifht 24 cm.

A. $440 cm^2$

B. $550 cm^2$

C. $330 cm^2$

D. $110 cm^2$

Answer:

14. Find the area of sector whose arc length and radius are 20 cm and 8 cm respectively.

15. In ΔMNP, NQ is a biscetor of $\angle N$. If MN = 5, PN = 7, MQ = 2.5, then find QP.

16. In the figure,

m (arc NS) $= 125°$

m (arc EF) = $37°$

find the measure $\angle NMS$,
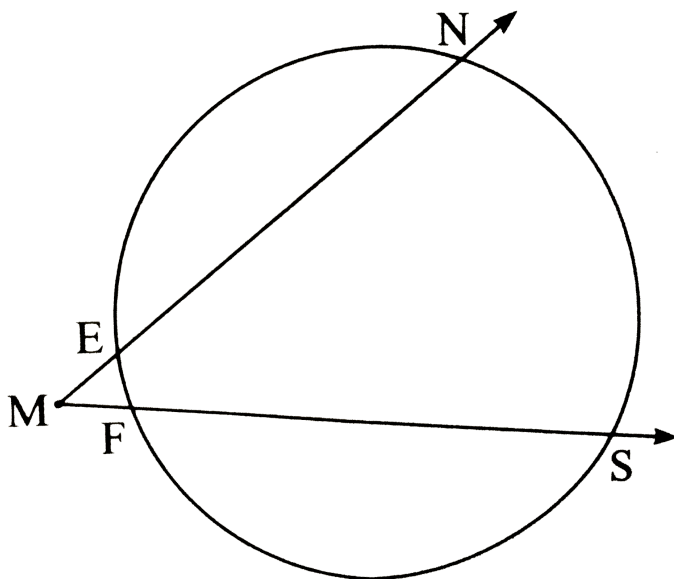
17. For finding AB and BC with the help of information given in the adjoining figure,
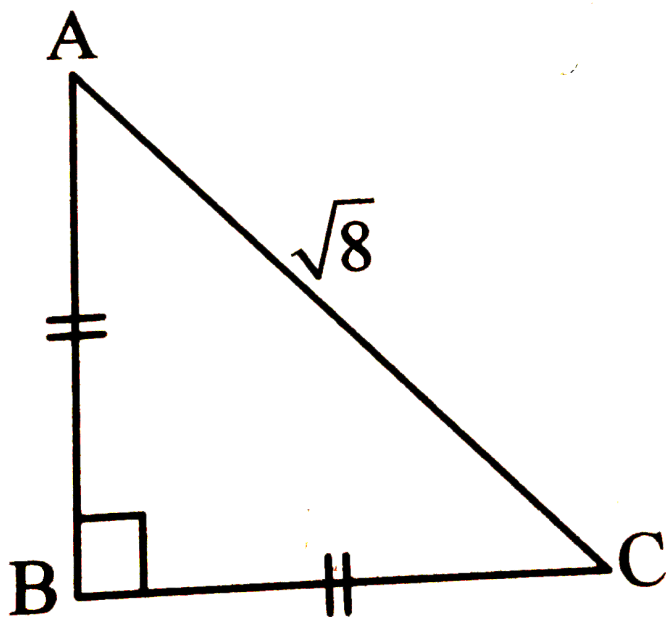
18. Theorem: The ratio of the areas of two triangles is equal to the ratio of the product of their bases and corresponding heights.

To prove the above theorem,

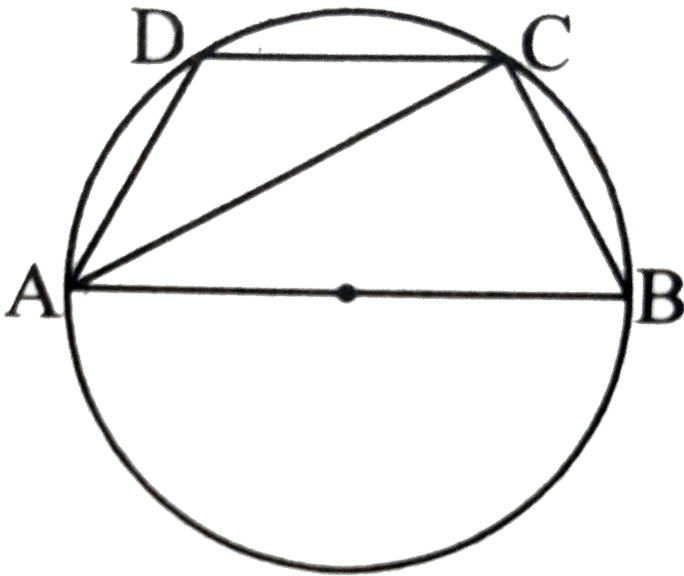a. Draw two triangles, and show their bases and heights.

b. Write 'given' and 'to prove' from the figures drawn.

19. In the figure □ ABCD is a cyclic quadrilateral.Seg AB is a diameter.

If $\angle ADC = 120°$, find the measure of $\angle BAC$.

20. Draw a circle of radius 2.5cm. Take a point P at a distance of 8 cm from its centre. Construct a pair of tangents from the point P to the circle.

21. Prove that:

$$\sec\theta + \tan\theta = \frac{\cos\theta}{1 - \sin\theta}.$$

22. Find the co-ordinates of point P if P divides the line segment joining the points A(-1,7) and B(4,-3) in the ratio 2:3.

23. A storm broke a tree and the treetop rested 20 m from the base of the tree, making an angle of $60°$ with the horizontal. Find the height of the tree.
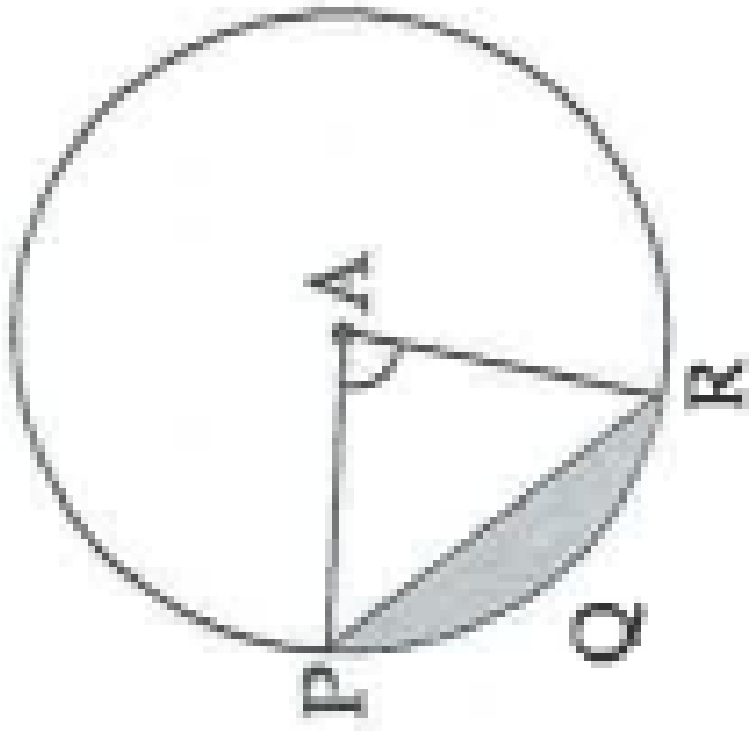
24. Draw a circle of diameter 7 cm. Take a point M at a distance of 10cm from its center. Construct a pair of tangents from the point M to the circle.

25. In the adjoining figure, if A is the centre of the circle. $\angle PAR$ =30° AP = 7.5, find the area of

segment PQR. $(\pi = 3.14)$

26. Prove that, in a right angled triangle, the square of the hypotenuse is equal to the sum of the squares of tlhe remaining two sides .
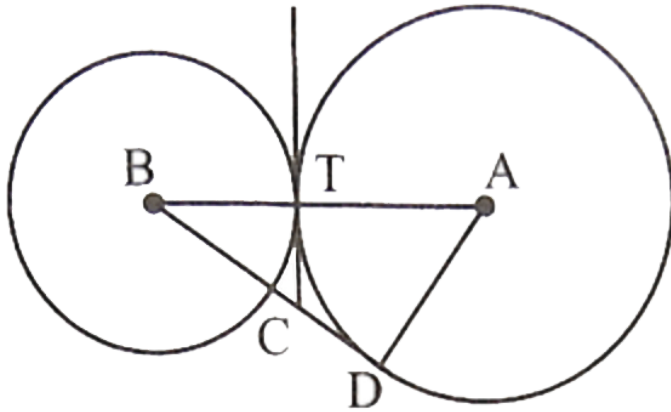
27. Two circles with centres at A and B touch each other externally at T.

Let BD is the tangent at D and TC is a common tangent. If AT has

length 3 units and BT has length 2 units, then

the length (in units)

of CB is

28. Prove that the tangent at any point of circle is perpendicular to the radius through the point of contact.

29. If a and b are natural numbers and a > b, then show that $(a^2 + b^2)$, $(a^2 - b^2)$, $(2ab)$ is a pythagorean triplet. Find two Pythagorean triplets using any convenient values of a and b.

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30. If in $\triangle ABC, \angle A = 4x^\circ, \angle B = 2x^\circ$ and $\angle C = 4y^\circ$, then write a linear equation in two variable showing relation between x and y.

31. The marks obtained by students in a Maths test are given below. Find their mode.

18,19,17,12,20,19,18,17,18,11.

32. If $(3\sqrt{5} - 6\sqrt{7}) - (2\sqrt{5} - 11\sqrt{7}) = a\sqrt{5} + b\sqrt{7},$ then find the values of a and b.

33. Determine if x+4 is a factor of $x^3 - 12x - 16$ or not.

34. 3 pencils and 4 pens cost $Rs.\,270$ while 4 pencils and 3 pens cost Rs. 150 . Find the combined cost of pencil and a pen.

35. A survey was conducted to know the hobbies of 50 students in a class 24 students like painting, 18 students like singing, and 15 students like both.Represent this information using Venn diagram. Find the number of students who like neither painting nor singing?

36. For an A.p.,if a =8, d=-2, then $t_{17}=$

A. 24

B. -24

C. 40

D. -40

Answer:

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37. The rate of GST on metal product is 28%, then the rate of GST is .....

A. 18 %

B. 14 %

C. 36 %

D. 1.4 %

Answer:

38. If α and β are the roots of the quadratic equation

$x^2 - 3x - 2 = 0$, then $\dfrac{\alpha}{\beta} + \dfrac{\beta}{\alpha} =$

A. $\dfrac{3}{2}$

B. $\dfrac{-3}{2}$

C. $\dfrac{13}{2}$

D. $\dfrac{-13}{2}$

Answer:

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39. Find the sum of all even numbers between 270 and 345.

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40. Solve using formula.

$$5x^2 + 13x + 8 = 0$$

41. From the given determinants, from two simultaneously equations and solve them.

$$\begin{vmatrix} 2 & y \\ -3 & x \end{vmatrix} = 7, \begin{vmatrix} 3 & y \\ 1 & x \end{vmatrix} = 5$$

42. Compare the quadratic equation $13\sqrt{3}x^2 + 10x + \sqrt{3} = 0$ with $ax^2 + bx + c = 0$ and find the value of the discriminant. Hence, write the nature of the roots.

43. $Solve : 4x + 3y = 69, 3x - 2y = 5$

44. On 1st January 2016, Sanika decides to save ₹10, ₹11 on second day, ₹12 on third day. If she decides to save like this, then on 31st December 2016 what would be her total saving?

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45. For an arithmetic progression, first term is -7 and the last tem is 53. If the sum of all the term is 483, then find the number of terms and the common difference.

46. If the face value of both the shares is same, then which investment

out of the following is more profitable?

Company A : dividend 16%, MV=80,

Company B : dividend 20%, MV=120.