# ©゙"doubtnut 

## MATHS

## BOOKS - V PUBLICATION

## TRIGONOMETRY

## Question Bank

1. In the triangle shown, what is the perpendicular
distance from the top vertex to the bottom side?
What is the area of the triangle?
'(\#\#VPU_TTT_MAT_X_PO1_C05_E01_001_Q01\#\#)'

## - Watch Video Solution

2. In each of the following parallelograms, find the distance betwèen the top and bottom side? Calculate the area of each parallelogram. '(\#\#VPU_TTT_MAT_X_PO1_CO5_EO1_002_Q01\#\#)'

## - Watch Video Solution

3. A rectangular board is țo be cut along the diagonal and the pieces rearranged to form an equilateral triangle, and the sides of the triangle
must. be 50 centimetres. What should be the length and breadth of the rectangle?

## - Watch Video Solution

4. Two rectangles are cut along the diagorial and
the triangles got are to be joined to another rectangle to make a regular hexagon as shown below:
'(\#\#VPU_TTT_MAT_X_P01_C05_E01_004_Q01\#\#)'
If the sides of the hexagón are 30 . centimetres,
what would be the length and breadth of the rectangles?
5. Calculate the area of the triangle shown.
'(\#\#VPU_TTT_MAT_X_P01_C05_E01_005_Q01\#\#)'

- Watch Video Solution

6. The diagonal of a square is ' 4 cm ' long. Find
a) its perimeter?
b) its area?

- Watch Video Solution

7. PQRS is a rectangle. Find angle SP R ? Find angle $P R Q$. If $P R=30$ then find $P$ Qand $Q R$. Calculate the perimeter of the rectangle.


## D Watch Video Solution

8. Calculate the
a) perimeter and
b) area of the triangle
'(\#\#VPU_TTT_MAT_X_PO1_C05_E02_003_Q01\#\#)'

## - Watch Video Solution

9. In $\triangle A B C, A B=10 \mathrm{~cm}, A C=8 \mathrm{~cm}$
$\angle A=45^{\circ}$
a) Find the perpendicular distance from $C$ to $A B$.
b) Find the area of the triangle.

- Watch Video Solution

10. Calculate the area of the triangle shown below.


## - Watch Video Solution

11. Without drawing pictures or looking up the tables, arrange the numbers $\sin 1^{\circ}, \cos 1^{\circ}, \sin 2^{\circ}$, $\cos 2^{\circ}$ in ascending order.
12. The lengths of two sides of a triangle are 8 cm and 10 cm and
the angle between them is $40^{\circ}$. Calculate its area.

What is
the area of the triangle with sides of the same length, but angle
between them $140^{\circ}$ ?

D Watch Video Solution
13. The sides of a rhombus are 5 centimetres long and one of its angles is $100^{\circ}$ Compute its area.

# 14. The sides of a parallelogram are 8 cm and 12 cm 

 andthe angle between them is $50^{\circ}$. Calculate its area.

## - Watch Video Solution

15. Angles of $50^{\circ}$ and $65^{\circ}$ are drawn at the end of
a 5 cm
long line, to make a triangle. Calculate its area.
16. A triangle is to be drawn with one side 8 cm and an angle on it $40^{\circ}$.

What is the minimum length of the side opposite this angle ?

## D Watch Video Solution

## 17. The diagonal of a square is ' 12 cm '. Calculate the

 perimeter and area of the square.18. The length of the perpendicular drawn from a vertex to opposite side of an equilateral triangle is
' 12 cm '. Calculate its perimeter and area.

## D Watch Video Solution

19. One side of a rhombus is 12 cm and one angle
is $135^{\circ}$ :- Find the distance between the parallel
sides?


## - Watch Video Solution

20. In $\triangle A B C, \angle A=60^{\circ}, \angle B=45^{\circ}, A B=10$
cm
a) Find the perpendicular diśtance from C to $A B$.
b) Find the area of the triangle.

## - Watch Video Solution

21. In the figure, $\mathrm{BC}=14, \angle B=40^{\circ}, \angle C=50^{\circ}$ Find the area of triangle $A B C$.

- Watch Video Solution

22. The figure shows a triangle and its circumcircle:
'(\#\#VPU_TTT_MAT_X_P01_C05_E05_001_Q01\#\#)'
What is the radius of the circle?

- Watch Video Solution

23. What is the circum radius of an equilateral triangle of sides 8 centimetres?

## - Watch Video Solution

24. The figure shows a triangle and its circum circle.
i) Compute the diameter of the circle.
ii) Compute the lengths of the other two sides of the triangle.
'(\#\#VPU_TTT_MAT_X_P01_C05_E05_003_Q01\#\#)'

## D Watch Video Solution

25. A circle is to. be drawn, passing through the ends of a line, 5 centimetres long, and the angle, on the circle on one side: of the line should be $80^{\circ}$ :

What should be the radius of the circle?

## D Watch Video Solution

26. In the figure, $O$ is the centre of the circle and
$x^{2}+y^{2}=25$ is the equation of the circle. What is
the radius of the circle?


- Watch Video Solution

27. A regular pentagon is drawn with vertices on a circle of radiús 15 centimetres. Calculate the length of its sides.
28. The figure shows a triangle and its circumcircle.

Compute the radius of the circle.
'(\#\#VPU_TTT_MAT_X_P01_C05_E06_001_Q01\#\#)'

## - Watch Video Solution

29. In $\triangle A B C, \angle A=40^{\circ}, B C=8 \mathrm{~cm}$

Find the circum diameter of the triangle. [sin
'40=0.64]'
30.
$\triangle A B C, A B=7 \mathrm{~cm}, B C=12 \mathrm{~cm}, \angle B=40^{\circ}$
a) Find the area of the triangle.
b) Calculate the length of AC.

## D Watch Video Solution

31. $A B^{\prime}$ is a chord of a circle with centre $O$.
'//_A OB=70^circ'
' $A B=6 \mathrm{~cm}$ '. Find the diameter of the circle.
'[sin $35^{\wedge}$ circ=0.57]'
'(\#\#VPU_TTT_MAT_X_PO1_C05_E06_004_Q01\#\#)'
32. In $\triangle{ }^{`} A B C, / \_\mathrm{A}=125^{\circ}, \mathrm{BC}=8 \mathrm{~cm}$. Find the diameter of the circumcircle. [sin 55=.82]


- Watch Video Solution

33. One ângle of a rhombus is $50^{\circ}$ and one diagonal
is 5 cm . What is its area?

## D Watch Video Solution

34. A ladder leans against a wall, with its foot 2 metres away
from the wall and the angle with the floor is $40^{\circ}$. How
high is the top end of the ladder from the ground?

## Watch Video Solution

35. Three rectangles are to be cut along the diagonals and the triangles so got rearrangedto form a regular pentagon, as shown in the picture. If the sides of the pentagon are to be 30 centimetres, what should be the length and breadth of the rectangles?
'(\#\#VPU_TTT_MAT_X_P01_C05_E07_003_Q01\#\#)'

## D Watch Video Solution

36. In the picture, the vertical lines are equally spaced.
'(\#\#VPU_TTT_MAT_X_P01_C05_E07_004_Q01\#\#)'
Prove that their helghts are in arithmetic sequence.

What is the common difference?

## - Watch Video Solution

37. One side of a triangle is 6 cm and the angle at its ends are $40^{\circ}$ and $65^{\circ}$. Calculate its area.
38. In the figure ' $\mathrm{BC}=\mathrm{a}, \mathrm{C} \quad \mathrm{D}=\mathrm{b}$ '
prove that 'a=3 b'
'(\#\#VPU_TTT_MAT_X_P01_C05_E08_001_Q01\#\#)'

D Watch Video Solution
39. Find the area of a triangle whose sides are a and $b$ and the angle between those sides is $C$

## - Watch Video Solution

40. 

$\triangle A B C, A B=10 \mathrm{~cm}, \angle A=40^{\circ}, \angle B=70^{\circ}$,

Compute the area of the triangle.
$\left[\tan 40^{\circ}=0.84, \tan 70=2.75\right]$

## D Watch Video Solution

41. $A B$ ' is the diameter of the circle. If 'PA=9' and '/_\

P A G=30^circ' find
a) Radius of the circle.
b) the lengths of the sides of the rilateral 'ADBC'.
'(\#\#VPU_TTT_MAT_X_PO1_C05_E08_004_Q01\#\#)'
42. A man 1.7 metres tall stands 10 metres away from the foot of a tree, and he sees the top of the tree at an angle of elevation $40^{\circ}$. How tall is the tree?

## - Watch Video Solution

43. A man 1.8 metres tall looks down from the top of a light house 25 metres high and sees a ship at an angle of depression $35^{\circ}$ How far is the ship
from the foot of the light house? Lets draw a figure first:

## - Watch Video Solution

44. A boy standing at the edge of a canal sees the top of a tree at an elevation of '70^circ .' $35^{\wedge}$ OStepping 10 metres back, he sees it at an elevation of ' $25^{\wedge}$ circ'. The boy is 1.5 metres tall. How wide is the canal and how tall is the tree?
'(\#\#VPU_TTT_MAT_X_P01_C05_E09_003_Q01\#\#)'

## - Watch Video Solution

45. When the sun is at an elevation of $40^{\circ}$ the length of the
shadow of a tree is 18 metres. What is the height of the tree?

## - Watch Video Solution

46. When the sun is at an elevation of $35^{\circ}$, the shadow of a tree is 10 metres. What would be the length of the shadow, when the sun is at an elevation of $25^{\circ}$ ?
47. From the top of an electric post, two wires are stretched to either side and fixed to the ground,

25 meters apart. The wires make angle $55^{\circ}$ and $40^{\circ}$ with the ground. What is the height of the post?

## - Watch Video Solution

48. A '1.5' metre tall boy saw the top. of a building under construction at an elevation of $30^{\circ}$.The completed building was 10 metres higher and the boy sáw its top at an elevation of $60^{\circ}$ from the same spot. What is the height of the büilding?
49. A '1.75' metre tall man, standing at the foot of a tower, sees the top of a hill 40 metres away at an elevation of ' $60^{\circ} \mathrm{Climbing}$ to the top of the tower, he sees it at an elevation of $50^{\circ}$. Calculate the heights of the tower and the hill.

## - Watch Video Solution

50. A man 1.8 metre tall standing a the top of a telephonetower,
saw the top of a 10 m high building at a
depression of $40^{\circ}$
and the base of the building at a depression of
$60^{\circ}$. What is
the height of the tower? How far is it from the building?

## D Watch Video Solution

51. Find the relation of the perimeter and area of a,regular polygon with its, circumradius.
52. Find a sequence of numbers getting. closer and closer to 'pi' using sin.

## D Watch Video Solution

53. 

$\triangle A B C, A B=20 \mathrm{~cm}, A C=25 \mathrm{~cm}$ and $\angle A=70^{\circ}$
a) Find the perpendicular from $C$ to $A B$.
b) What is the area of the triangle?
$[\sin 70=0.94]$

## D Watch Video Solution

54. In triangle PQR,

## (D) Watch Video Solution

55. In '/\ $\mathrm{ABC}, \mathrm{a}, \mathrm{b}, \mathrm{c}$ ' are the sides and ' R ' be the circum radius, prove that the area of the triangle is '(abc)/( $4 R)^{\prime}$.
'(\#\#VPU_TTT_MAT_X_PO1_C05_E11_003_Q01\#\#)'
56. In triangle ' $\mathrm{ABC}, / \_\backslash \mathrm{A}=90^{\wedge}$ circ' and tan ' $\mathrm{B}=2(2 / 5)^{\prime}$
a) Find $\sin B, \cos B '$.
b) What is $\sin ^{\wedge} 2 B+\cos ^{\wedge} 2 B$ ?'
'(\#\#VPU_TTT_MAT_X_P01_C05_E11_004_Q01\#\#)'

## D Watch Video Solution

57. In $\triangle A B C, A B=10 \mathrm{~cm}, A C=20 \mathrm{~cm}$ and
$\angle A=135^{\circ}$
a) Compute the-area of the triangle.

## D Watch Video Solution

58. Charges $+2 q,+q$ and $+q$ are placed at the corners $A, B$ and $C$ of an equilateral triangle $A B C$. If
$E$ is the electric field at the circumcentre $O$ of the triangle, due to the charge $+q$, then the magnitude and direction of the resultant electric field at O is

## D Watch Video Solution

59. One perpendicular side of a right triangle with angle $45^{\circ}$ is ${ }^{\prime} 8 \mathrm{~cm}$ '.
a) What is the hypotensuse?
b) Find the radius from the midpoint of hypotenuse to the corner of the angle?

## D Watch Video Solution

60. A man observed the top of a tower at a distance $a$ from its base
at an angle of elevation $30^{\circ}$. He saw the top of a tower at an
angle of elevation $60^{\circ}$ from a point at the distance $b$ from the
base, Prove that the height of the tower $h=\sqrt{a} b$
61. When the sun is at an elevation of $40^{\circ}$ the shadow
of the flagpost is 15 metres.
a) Find the height of the flagpost.
b) What would be the length of, the shadow, when
the sun is at an elevation of $45^{\circ}$ ?
[ $\tan 40=0.84, \sin 40=0.64]$

## D Watch Video Solution

62. Two buildings in a plane ground are 20 metres
apart. From the top of the smaller building, one
sees the base of the building at a depression of
$50^{\circ}$ and its top at an elevation of $25^{\circ}$.
a) Draw a rough figure and mark the measurements.
b) Find the helght of the smaller building.
c) Find the height of the bigger building.
'[tan 50^circ=1.2, $\tan 25^{\wedge}$ circ=0.4]'

## - Watch Video Solution

63. Using the relations. " $a / /(\sin A)=b /(\sin B)=c /(\sin$
$C)=2 R^{\prime}$ and ' $A=1 / 2 a x x b \sin C^{\prime}$, prove.that area of $a$ triangle 'A=(abc)/(4R)'.
64. One sees the top of a tree on the bank of a river at an elevation of $70^{\circ}$ from the other bank.

Stepping 20 metres back, he sees the top. of the tree at an elevation of $55^{\circ}$. Height of the person is '1.4' metres.
a) Draw a rough figure and mark the measurements.
b) Find the height of the tree.
c) Find the width of the river.
'[tan 70=2.75 , tan 55=1.43]'
65. A tower is built in a river of width 80 metres.

One sees the top of the river at an elevation of $55^{\circ}$ and $65^{\circ}$. from either banks of the river.
a) Draw a figure using the given measurements.
b) Find the height of tower
c) Find the distances to either banks from the foot of the tower.
$\left[\tan 55^{\circ}=1.43, \tan 65^{\circ}=2.14\right]$

## - Watch Video Solution

66. Two children of same height standing on either
sides of a tower, looks the top of tower at an elevation of $40^{\circ}, 55^{\circ}$. The distance between the children is 25 metres. Height of the chlidren is 1.5 metres.
a) Draw a rough figure showing the givën measurements.
b) Calculate the height of the tower.
$\left[\sin 40^{\circ}=0.64, \sin 55^{\circ}=0.82, \cos 40^{\circ}=0.77, \cos 55^{\circ}\right.$
$\left.=0.57, \tan 40^{\circ}=0.89, \tan 55^{\circ}=1.43\right]$

D Watch Video Solution
67. A child stands 30 metres away from the foot of a telephone tower, sees the top of the tower at an angle of elevation $30^{\circ}$. Stepping some distance towards the tower, sees it at an elevation of $45^{\circ}$
a) What is the height of the tower?
b) How much distance did he walk?

## D Watch Video Solution

68. One sees a boat in the sea, on the top of a light house at a depression of $20^{\circ}$. After sometimes he sees the boat at a depression of $30^{\circ}$. If the height of the lighthouse is 160 meter. What distance will
the boat travel during this time?
$[\tan 20=0.3640, \tan 30=0.5774]$

## D Watch Video Solution

69. Two buildings of same height in a plane ground are 80 meters apart, A boy standing in between sees the top of the buildings at an elevation of $35^{\circ}$ and $65^{\circ}$.
a) Draw a rough figure.
b) Find the distaince from each buildings to the boy.
c) Find the height of büildings.
'[sin $35=0.57, \cos 35=0: 81, \tan 35=0.70, \sin 65=0.90$, $\cos 65 .=0.42, \tan 65=2.14]$

## D Watch Video Solution

70. On the top of a 60 metre high building sees
the top and
bottom of a tower at a depression of $30^{\circ}$ and $60^{\circ}$.

What is the height of the tower?

## - Watch Video Solution

71. $A B C D$ is a parallelogram. ' $A B=8 \mathrm{~cm}$ ', ' $\mathrm{A} D=6 \mathrm{~cm}$, / $\backslash \mathrm{D}=120^{\wedge}$ circ.' Find the area of the parallelogram. $\left(\# \# V P U_{T} T_{M} A T_{X}-P 01_{C} 05_{E} 12_{001}-Q 01 \# \#\right)$

## - Watch Video Solution

72. In $\triangle A B C, B C=18 \mathrm{~cm}, A C=18 \mathrm{~cm}$
$\angle C=120^{\circ}$
(a) Find the perpendicular distance from ' C ' to ' A B '.
b) What is the area of the triangle?
c) What is the ratio of sides of the triangle with angle $30^{\circ}, 30^{\circ}$ and $120^{\circ}$ ?
73. Can you cut out a triangle having one angle ' $37^{\wedge}$ circ' and side opposite to this angle as ' 9 cm ' from a circular carboard sheet of radius ' 14 cm ?' '[sin $\left.37^{\wedge} \operatorname{circ}=0.60, \cos 37^{\wedge} \operatorname{circ}=0.79\right]^{\prime}$

## D Watch Video Solution

74. 

triangle
$A B C, A B=14 \mathrm{~cm}, A C=15 \mathrm{~cm}, \sin A=\frac{4}{5}$.
Find the following:
a) The perpendicular distance from $C$ to $A B$.
b) The area of the triangle.
c) The length of $B C$.

## D Watch Video Solution

75. From the top of a building 15 meter high, one sees the top of another taller building at an angle of elevation of $70^{\circ}$ and bottom at an angle of depression of $40^{\circ}$
a) Draw a rough figure and mark the measurements given.
b) Find the height of the taller building.
$[\tan 70=2.747, \tan 40=0.839]$
76. In triangle $\triangle A B C, \mathrm{AD}$ is the median from A .
$\triangle B A D=35^{\circ}, \mathrm{AB}=18 \mathrm{~cm}$ and $\mathrm{AD}=12 \mathrm{~cm}$. Find:
a) The ratio of the areas of the triangles $\triangle A D C$ and $\triangle A B C$.
b) The perpendicular distance from $D$ to $A B$.
c) The length of $\mathrm{BC} .\left[\sin 35^{\circ}=0.57, \cos 35^{\circ}=0.82\right.$, $\left.\tan 35^{\circ}=0.7\right]$

## - Watch Video Solution

77. If in triangle ' ABC ', ' $\mathrm{AC=}=\mathrm{BC}, / \_$A C B=80^circ' ' A
$B=8 \mathrm{~cm}$, then compute the following.
'(\#\#VPU_TTT_MAT_X_P01_C05_E12_007_Q01\#\#)'
a) The perpendicular distance from C to ' AB '.
b) The area of triangle $A B C$.
c) The length of the sides ' A C ' and ' BC '.
'[sin $80^{\wedge}$ circ $=0.98, \sin 50^{\wedge}$ circ $=0.77, \tan 80^{\wedge}$ circ $=$ 5.67, $\left.\tan 50^{\wedge} \mathrm{circ}=1,19\right]$ '
78. Angle measures of a triangle are ' $30^{\wedge}$ circ',
' $700^{\wedge}$ circ, $80^{\wedge}$ circ. . If the length of its smallest side is 10 centimetres, find the length of its other sides.

You can use the following table.
'(\#\#VPU_TTT_MAT_X_P01_C05_E13_001_Q01\#\#)'

## D Watch Video Solution

79. A boy standing on the top of a tower 20 metrés
height, saw the top of a building at an elevation of
$50^{\circ}$ and its base at a depression of $30^{\circ}$
a) Draw a rough figure. according to the given
data.
b) find the distance between the tower and the building.
c) find the distance from the top of the tower to the base of the building.
d) find the height of the building.
$\left[\sin 50^{\circ}=0.77, \cos 50^{\circ}=0.64, \tan 50^{\circ}=1.2\right.$, 'sqrt3 $\left.^{\prime}=1.7\right]$

## D Watch Video Solution

80. A ladder leans against a wall. Its foot is 3 metres away from
the wall and making an angle $35^{\circ}$ with ground.

How high is
the other end of the ladder from the ground?
$\left(\sin 35^{\circ}=0.57, \cos 35^{\circ}=0.82, \tan 35^{\circ}=0.70\right)$

## D Watch Video Solution

81. A boy sees the top of a tówer with an angle of elevation. $60^{\circ}$.

Stepping 20metres back, he sees the same top with an angle
of elevation $30^{\circ}$. Draw a rough figure and calculate
the height of the tower.
82. In the figure,
'/\ $\mathrm{B}=90^{\wedge} \mathrm{circ}, /$ \ $\mathrm{C=}=\mathrm{x}^{\wedge} \mathrm{circ}$ '
'/_ \A=y'
'(\#\#VPU_TTT_MAT_X_P01_C05_E14_003_Q01\#\#)'
a) What is ' $x+y$ ' ?
b) Prove that 'sin $x=$ ' 'cos $y$ '
c) If ' $\sin x=\cos x$ ', find the vạalue of ' $x$ '.

## - Watch Video Solution

83. In the figure, '/\ $\mathrm{B}=50^{\wedge}$ circ, $/ \_$\ADC=135^circ' 'A
$B=10$ ' centimetre. ' $B C=25$ ' centimetre.
$\left(\# \# V P U_{\top} T_{M} A T_{X}-P 01_{C} 05_{E} 14_{004}-Q 01 \# \#\right)$
a) What is the area of the triangle ' $A B C$ ' ?
b) Find the length of $D C$.
'(sin $50^{\wedge}$ circ $=0.77, \cos 50^{\wedge}$ circ $=0.64$, $\tan$

50^circ=1.19)'

## D Watch Video Solution

84. In 'triangle A B C, /_ $\backslash \mathrm{A}=75^{\wedge}$ circ, / $\backslash \mathrm{C}=60^{\wedge}$ circ'
'(\#\#VPU_TTT_MAT_X_P01_C05_E14_005_Q01\#\#)'
a) What is the measure of $/ / \backslash B$ ?'
b) If ' $\mathrm{AB}=5$, sqrt2', what is the length of ' $A C$ ' ?
c) Find the ratio of ' $A B: B C$ : $A C$ '.

## - Watch Video Solution

85. In triangle 'A B C', the length of. AP, is 10 centimetres. What is the length of BP? What is the length of ' PC ' ? Calculate the length of ' BC ' ?
'(\#\#VPU_TTT_MAT_X_PO1_C05_E15_001_Q01\#\#)'

## - Watch Video Solution

86. In triangle ' ABC ', length of ' $\mathrm{AB}=6 \sim \mathrm{~cm}$ ', '/_
$A=70^{\wedge}$ circ , /\ $\backslash=55^{\wedge}$ circ'
'(\#\#VPU_TTT_MAT_X_P01_C05_E15_002_Q01\#\#)'
a) Find '/<br>C'.
b) Find 'AC'
c) Find the area of triangle ' ABC '. '(sin $70^{\wedge}$ circ $\left.=0.93\right)^{\prime}$

## D Watch Video Solution

87. A man standing on the top of a light house sees a ship approaching the seashore at an angle of depression of $22^{\circ}$. After the ship has travelled

100 meters more towards the sea shore, he sees it at an angle of depression of $31^{\circ}$. The ship stopes there.
a) Draw a rough-sketch.
b) How far is the ship from the light house.
c) Find the height of the light house.
$\left(\tan 22^{\circ}=0.4, \tan 31^{\circ}=0.6\right)$

## D Watch Video Solution

88. ' $A B C D$ ' is a parallelogram. ' $A B=8 \mathrm{~cm}$ '. ' $\mathrm{A} D=4 \mathrm{~cm}$,
/_ $\backslash \mathrm{B}=120^{\wedge}{ }^{\text {circ' }}$
'(\#\#VPU_TTT_MAT_X_PO1_C05_E16_001_Q01\#\#)'
a) What is '/\ $\mathrm{A}^{\prime}$ ?
b) What is the perpendicular distance from $D$ to
'ABP^circ'
c) What is the area of $A B C D$ ?

## D Watch Video Solution

89. $O$ is the centre of the circuń circle of triangle

ABC.
'/_ $\backslash \mathrm{A}=40^{\wedge}$ circ, / $\backslash \mathrm{B}=80^{\wedge}$ circ'
'/ \ C=60^circ, B C=6.4' centimetres.
'(\#\#VPU_TTT_MAT_X_P01_C05_E16_002_Q01\#\#)'
a) What is the diametre of the circke.
b) What is the length of the other two sides.

## D Watch Video Solution

90. A boy saw the top of a building under construction at an elevation of $30^{\circ}$.

The completed building was 12 m higher and the boy saw its top, at an elevation of $60^{\circ}$ from the same spot.
a) Draw a rough figure based on the given details.
b) What is the height of the building?
c) What is the distance between the building and the boy?

## - Watch Video Solution

91. In the figure, ' $C, D$ ' are points on the circle ' $A D$ ' is a diameter of the circle '/\ C=30^circ, A B=4' centimetres.
'(\#\#VPU_TTT_MAT_X_PO1_C05_E17_001_Q01\#\#)'
a) $1 / \ D=$
b) '/_
c) What is the length of the diameter?
92. In triangle 'PQR, /_ $\mathrm{Q}=90^{\wedge}$ circ, /_ $\mathrm{R}=\mathrm{x}^{\wedge} \mathrm{circ}$.' Lengths of the sides $P Q, Q R$ and $P R$ are $a, b, c$ respectively.
'(\#\#VPU_TTT_MAT_X_P01_C05_E17_002_Q01\#\#)'
a) Which among the following is 'tan $x^{\wedge} \operatorname{circ}$ ?' ' $(a / c$, b/a, a/b, b/c)'
b) Similarly write $\sin x^{\wedge}$ circ' and 'cos $x^{\wedge}$ circ' from this triangle:
c) Prove that $\left(\sin x^{\wedge} \operatorname{circ}\right) /\left(\cos x^{\wedge} \operatorname{circ}\right)=\tan x^{\prime}$

## - Watch Video Solution

93. A boy is standing between two building of equal height. The boy and the buildings are in a straight line. He see the tops of those buildings at elevations of $45^{\circ}$ and $30^{\circ}$. The nearest building is 20 metres away from him. Draw a rough figure.

## D Watch Video Solution

94. In the figure
'/_ $\backslash \mathrm{B}=90^{\wedge}$ circ'
'/\ $\backslash=44^{\wedge}$ circ'
a) What is the measure of $/ / \backslash \mathrm{A}$ ?'
b) Which among the following is tan ' $44^{\wedge}$ circ' ?
'((A B)/(BC), (A B)/(A C), (BC)/(A B), (BC)/(AC))'
c) Prove that 'tan $44^{\wedge}$ circ $x x \tan 46^{\wedge}$ circ $=1^{\prime}$.
'(\#\#VPU_TTT_MAT_X_PO1_C05_E18_001_Q01\#\#)'

## D Watch Video Solution

95. In the figure ' $P$ ' is the centre of the circle. 'A, B' and ' D ' are points on the circle.
'/\ $\mathrm{P}=90^{\wedge} \mathrm{circ}, \mathrm{A} \mathrm{D}=5$ ' centimetres.
'(\#\#VPU_TTT_MAT_X_P01_C05_E18_002_Q01\#\#)'
a) What is the measure of $/ / \backslash \mathrm{A}^{\prime}$ ?
b) What is the area of triangle APD?
c) Find the area of the parallelogram $A B C D$.

## D Watch Video Solution

96. A boy standing at one bank of a river sees the top of a tree on the other bank directly opposite to the boy at an elevation of $60^{\circ}$. Stepping 40 metres back, he sees the top at an elevation of $30^{\circ}$.

Draw a rough figure and find the height of the tree.

## - Watch Video Solution

97. Diagonal of a rectangle is 12 centimetres in length. The angle
made by the diagonal with one of its sides is $30^{\circ}$.

Find the
perimeter and area of the rectangle.

## - Watch Video Solution

98. In triangle $A B C$ if $<B=90^{\circ}, \angle A=30^{\circ}$, find $\sin C$,
$\cos C, \tan C$

D Watch Video Solution
99. In '/_ $\backslash \mathrm{ABC}, / \_\mathrm{A}=125^{\wedge} \mathrm{circ}, \mathrm{BC}=8 \mathrm{~cm}$ ', find diameter of the circle.
'(\#\#VPU_TTT_MAT_X_P01_C05_E19_003_Q01\#\#)'

## D Watch Video Solution

100. In $\triangle A B C, A C=B C=12$ centimetres, $<$ $\mathrm{ACB}=60^{\circ}$
a) What is the perpendicular distance from $C$ to $A B$ ?
b) Calculate the area of the triangle.
101. In the figure '/_A=x', write 'sin ${ }^{\wedge} \operatorname{circ} x, \cos x^{\prime}$ 'tan x'
a) Find 'sin $x \cos x$ '.
b) What is '/_B' ?
c) Prove that $\sin (90-x)=\cos x, \cos (90-x)=\sin x$ '


- Watch Video Solution

