MATHS

BOOKS - RD SHARMA MATHS (HINGLISH)

MENSURATION-I (AREA OF A TRAPEZIUM AND A POLYGON

Others

1. A square and a rectangular field with measurements as given in the figure have the same perimeter. Which field has a larger area?

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2. The length and breadth of a rectangular field are in ratio 3:2. If the area of the field is 3456 sq m. Find the cost of fencing the field at Rs.4 per meter.

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3. The length and breadth of a rectangular field are in the ratio 5:3. If the cost of cultivating the field at 25 paise per square metre is Rs. 6000, find the perimeter of the field.

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4. The dimensions of a room are 16 × 14 × 10 metres. There are 4 windows of 1 . 3 m × 1 . 4 m a n d 2 d o or s o f 2 m × 1 m . What will be the

cost of white washing the walls and painting the doors and windows, if the rate of white washing is R s .5 p e r m 2 and the rate of painting is R s .8 p e r m 2 .

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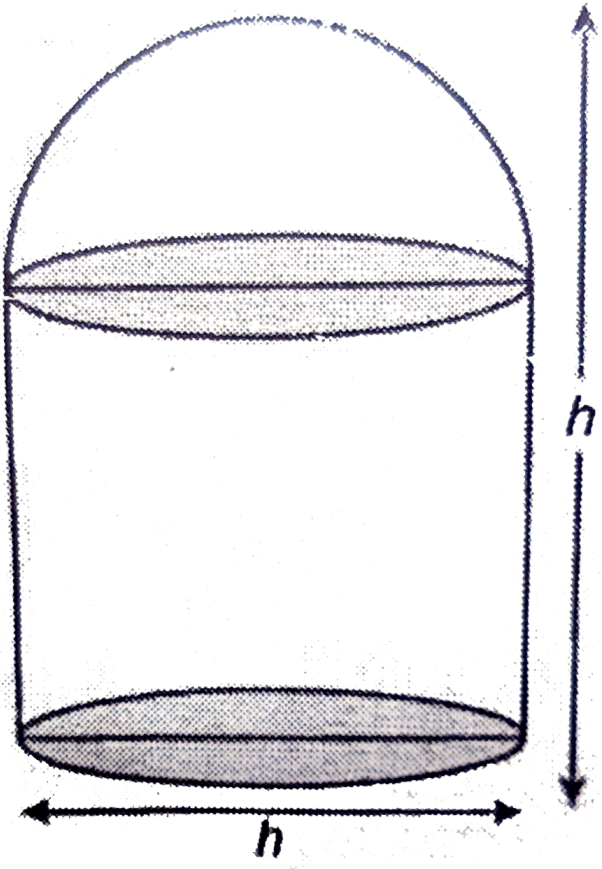
5. There is a hemispherical roof on the cylindrical room .There is 5236 m^3 air in this room .The inner diameter of the floor is equal to the maximum height of the room. Find the

height of room . (Given that π=3.1416)



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6. The diagonal of a square is $4\sqrt{2}cm$. The diagonal of another square whose area is double that of the first square is :

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7. The base of a parallelogram is thrice its height. If the area is $867cm^2$, find the base of the parallelogram.

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8. Each side of a rhombus is 13 cm and the length of one diagonal is 24 cm. Find the area of the rhombus.

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9. Diagonal of rhombus meet at centre and form right angle triangle. Length of base is 10 cm and height is 24 cm. Find hypotenuse and perimeter of rhombus.

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10. Mrs. Kaushik has a square plot with the measurement as shown in the figure. She wants to construct a house in the middle of the plot. A garden is developed around the house. Find the total cost of developing a garden around the house at the rate of Rs 55 per m^2 .

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11. ABCD is a rectangle with length 1 dm and breadth 42 m. The diagonal AC is drawn. Find area of ABCD.

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12. One diagonal of a quadrilateral is 20 m long and the perpendiculars to it from the opposite vertices are 8.5 m and 11 m. Find the areaof the quadrilateral.

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13. A flooring tile has the shape of a parallelogram whose base is 24 cm and the corresponding height is 10 cm. How many such tiles are required to cover a floor of area 1080 m^2? (If required you can split the tiles in whatever way you want to fill up the corners).

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14. A playground has the shape of a rectangle, with two semi-circles on its smaller sides as

diameters, added to its outside. If the sides of the rectangle are $36m\ and\ 24.5m$, find the area of the playground. $\left(Take\ \pi = \frac{22}{7}\right)$

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15. A rectangular piece is 20m and 15m wide. From its four corners, quadrants of radii 3.5m have been cut. Find the area of the remaining part.

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16. The diameter of a wheel of a bus is $90cm$ which makes 315 revolutions per minute. Determine its speed in kilometres per hour. $\left(Take\ \pi = \frac{22}{7}\right)$

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17. The area of a rhombus is $240\ cm^2$ and one of the diagonal is 16cm. Find another diagonal.

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18. The diagonals of a rhombus are 7.5 cm and 12 cm. Find its area.

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19. The diagonal of a quadrilateral shaped field is 24 m and the perpendiculars dropped on it from the remaining opposite vertices are 8 m and 13 m. Find the area of the field.

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20. Find the area of a rhombus whose side is 6 cm and whose altitude is 4 cm. If one of its diagonals is 8 cm long, find the length of the other diagonal.

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21. The floor of a building consists of 3000 tiles which are rhombus shaped and each of its diagonals are 45 cm and 30 cm in length. Find the total cost of polishing the floor, if the cost per m^2 is Rs 4.

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22. A rectangular grassy plot is 112m long and 78m broad. It has a gravel path 2.5m wide all around it on the side. Find the area of the path and the cost of constructing it at Rs. 4.50 per square metre.

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23. Find the area of a rhombus, each side of which measures 20 cm and one of whose

diagonals is 24 cm.

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24. The length of a side of a square field is 4 m. What will be the altitude of the rhombus, if the area of the rhombus is equal to the square field and one of its diagonals is 2 m?

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25. Find the area of the field in the form of a rhombus, if the length of each side be 14cm and the altitude be 16cm.

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26. The cost of fencing a square field at 60 paise per metre is Rs. 1200. Find the cost of reaping the field at the rate of 50 paise per 100 sq. metres.

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27. In exchange of a square plot one of whose sides is 84m, a man wants to buy a rectangular plot 144 m long and of the same areas of the square plot. Find the width of the rectangular plot.

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28. The area of a rhombus is $84\,m^2$. If its perimeter is 40m, then find its altitude.

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29. A garden is in the form of a rhombus whose side is 30 metres and the corresponding altitude is 16m. Find the cost of levelling the garden at the rate of Rs. 2 per m^2 .

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30. A field in the form of a rhombus has each side of length 64m and altitude 16m. What is

the side of a square field which has the same area as that of a rhombus?

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31. The area of a rhombus is equal to the area of a triangle whose base and the corresponding altitudes are 24.8cm and 16.5cm respectively. If one of the diagonals of the rhombus is 22cm, find the length of the other diagonal.

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32. Find the area of a trapezium whose parallel sides are of lengths 10cm and 12cm and the distance between them is 4cm.

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33. The area of a trapezium is $440\ cm^2$. The lengths of the parallel sides are respectively 30cm and 14cm. Find the distance between them.

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34. The area of a trapezium-shaped field is 480 m2, the distance between two parallel sides is 15 m and one of the parallel sides is 20 m. Find the other parallel side.

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35. Find the altitude of a trapezium, the sum of the length of whose bases is 6.5cm and whose area is $26cm^2$.

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36. Find the sum of the lengths of the bases of a trapezium whose altitude is 11cm and whose area is $0.\ 55\ m^2$.

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37. The area of the trapezium is 105 .FIND THE LENGTH OF SIDE.`

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38. The area of a trapezium is $180\ cm^2$ and its height is 12cm. If one of the parallel sides is double that of the other, find the two parallel sides.

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39. Find the area of a trapezium whose parallel sides are $20cm$ and $10cm$ and other sides are $13cm$ and $13cm$

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40. If the perimeter of a trapezium is $52cm$, its nonparallel sides are equal to $10cm$ each and its altitude is $8cm$, find the area of the trapezium.

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41. The area of a trapezium is $180cm^2$ and its height is $9cm$. If one of the parallel sides is

longer than the other by 6 cm, the length of the longer of the parallel sides is

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42. Length of the fence of a trapezium shaped field $ABCD$ is $120m$. If $BC = 48m, CD = 17m$ and $AD = 40m$, find the area of this field. Side AB is perpendicular to the parallel sides AD and BC.

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43. Diagram of the adjacent picture frame has outer dimensions $= 24cm \times 28cm.$ inner dimensions $16cm \times 20cm.$ Find the area of each section of the frame, if the width of each section is same.

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44. Find the area, in square metres, of the trapezium whose bases and altitudes are: bases = 12dm and 30dm, altitude = 10dm

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45. Find the area of a trapezium with a base of 15cm and height 8cm, if the side parallels to the given base is 9cm long.

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46. Find the area of a trapezium whose parallel the side is of length 16dm and 22dm and whose height is 12dm.

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47. Find the height of a trapezium, the sum of the lengths of whose base (parallel sides) is 60cm and whose area is $600\ cm^2$. .

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48. Find the altitude of a trapezium whose area is $65\ cm^2$ and whose bases are 13cm and 26cm.

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49. Find the sum of the lengths of the bases of a trapezium whose area is $4.2\, m^2$ and whose height is 280 cm.

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50. The area of a trapezium is $960\, cm^2$. If the parallel sides are 34cm and 46cm, find the distance between them.

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51. Find area of a trapezium whose parallel sides are $28cm$ and $14cm$ and the distance between them is $5cm$. .

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52. The cross-section of a canal is a trapezium in shape. If the canal is 10m wide at the top 6m wide at the bottom and the area of cross-section is $72m^2$ determine its depth.

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53. The area of a trapezium is $91\ cm^2$ and its height is 7cm. If one of the parallel sides is longer than the other by 8cm, find the two parallel sides.

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54. The area of a trapezium is $384\ cm^2$. Its parallel sides are in the ratio 3:5 and the perpendicular distance between them is 12cm.

Find the length of each one of the parallel sides.

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55. Mohan wants to buy a trapezium shaped field. Its side along the river is parallel to and twice the side along the road. If the area of this field is $10500m^2$ and the perpendicular distance between the two parallel sides is 100 m, find the length of the side along the river.

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56. The area of a trapezium is $1586\,cm^2$ and the distance between the parallel sides is 26 cm. If one of the parallel sides is 38cm, find the other.

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57. The parallel sides of a trapezium are 25cm and 13cm; its nonparallel sides are equal, each being 10cm, find the area of the trapezium.

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58. Find the area of a trapezium whose parallel sides $25cm, 13cm$ and other sides are $15cm$ and $15cm$.

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59. If the area of a trapezium is $28cm^2$ and one of its parallel sides is 6cm, find the other parallel side if its altitude is 4cm.

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60. There is a regular hexagon MNOPQR of side 5 cm . aman and ridhima divided it into two different ways . Find the area of this hexagon both ways.

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