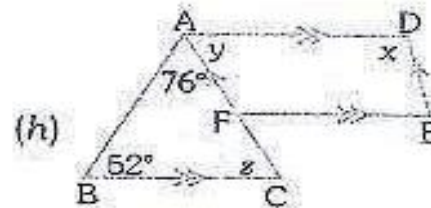
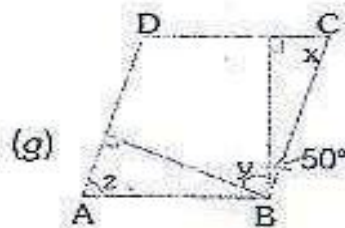
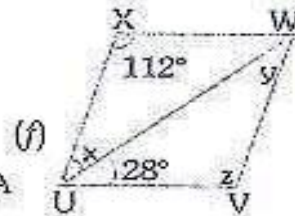
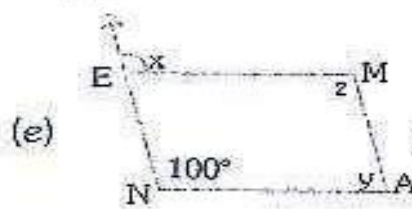
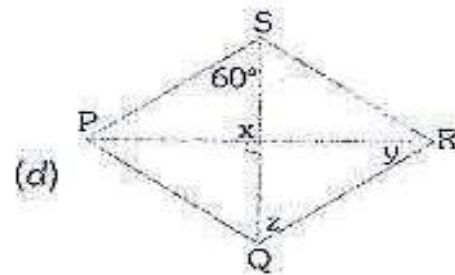
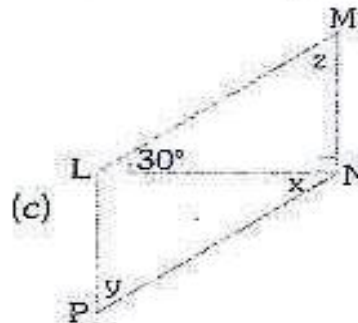
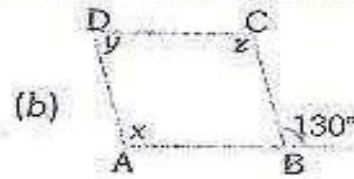
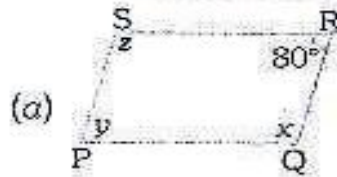


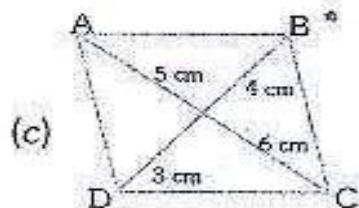
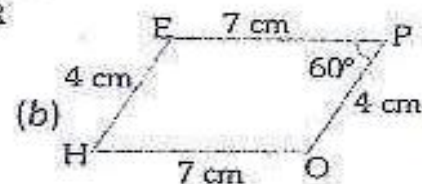
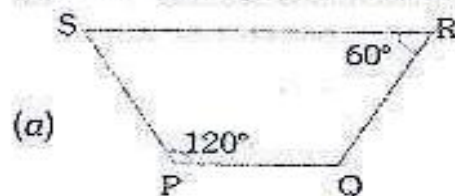
chap. 11. MENSURATION

1. The curved surface area of a 10 m high cylinder is 440 m^2 . Find the volume of the cylinder.
2. A rectangular vessel of dimensions 20 cm by 15 cm by 11 cm is full of water. If the water is poured into an empty cylindrical vessel of radius 10 cm, find the height of water in the cylindrical vessel.
3. Find the volumes, the curved surface areas and the total surface areas of the cylinders having dimensions:
(i) $r = 5 \text{ cm}$, $h = 21 \text{ cm}$ (ii) $r = 8.5 \text{ cm}$, $h = 35 \text{ cm}$ (iii) $r = 12 \text{ cm}$, $h = 4 \text{ cm}$
4. The volume of a 5 cm long cylindrical iron rod is 6930 cm^3 . Find its diameter.
5. The circumference of a base of a cylinder is 176 cm and its height is 60 cm, find the volume of the cylinder.
6. A cylindrical tank has a capacity 9240 cm^3 . If its depth is 15 cm, then find its diameter.
7. A rectangular piece of paper of dimensions 88 cm by 5 cm is rolled along the length to form a cylinder. Find the volume of the cylinder formed.
8. Find the volume of the cube whose side is
(i) 5 cm (ii) 6.5 cm (iii) 14 cm (iv) 1.2 m
9. The ratio of the length, breadth and height of a cuboid is 5 : 3 : 2. If its volume is 3750 cm^3 , find the length, breadth and height of the cuboid.
10. The bottom of the tank of a water cooler is rectangular in shape. It is $90 \text{ cm} \times 60 \text{ cm}$. How high it must be made, so that it can hold 162 litres of water?
11. A beam of wood is 5 m long and 36 cm thick. It is made of 1.35 m^3 of wood. What is the width of the beam?
12. The volume of a room is 378 m^3 and the area of its floor is 84 m^2 . Find the height of the room.
13. A swimming pool is 260 m long and 140 m wide. If 54600 cubic metres of water is pumped into it, find the height of the water level in it.
14. Find the volume of wood used to make a closed box of outer dimensions $60 \text{ cm} \times 45 \text{ cm} \times 32 \text{ cm}$, the thickness of wood being 2.5 cm all around.
15. Find the volume of iron required to make an open box whose external dimensions are $36 \text{ cm} \times 25 \text{ cm} \times 16.5 \text{ cm}$, the box being 1.5 cm thick throughout. If 1 cm^3 of iron weighs 8.5 grams, find the weight of the empty box in kilograms.
16. A box with a lid is made of wood which is 3 cm thick. Its external length, breadth and height are 56 cm, 39 cm and 30 cm respectively. Find the capacity of the box. Also find the volume of wood used to make the box.
17. The external dimensions of a closed wooden box are 62 cm, 30 cm and 18 cm. If the box is made of 2-cm-thick wood, find the capacity of the box.
18. A closed wooden box 80 cm long, 65 cm wide and 45 cm high, is made of 2.5-cm-thick wood. Find the capacity of the box and its weight if 100 cm^3 of wood weighs 8 g.
19. Find the volume, lateral surface area and the total surface area of a cube each of whose edges measures: (i) 7 m (ii) 5.6 cm (iii) 8 dm 5 cm
20. The surface area of a cube is 1176 cm^2 . Find its volume.
21. The volume of a cube is 729 cm^3 . Find its surface area.
22. The dimensions of a metal block are 2.25 m by 1.5 m by 27 cm. It is melted and recast into cubes, each of side 45 cm. How many cubes are formed?
23. If the length of each edge of a cube is doubled, how many times does its volume become? How many times does its surface area become?
24. A solid cubical block of fine wood costs ₹ 256 at ₹ 500 per m^2 . Find its volume and the length of each side.

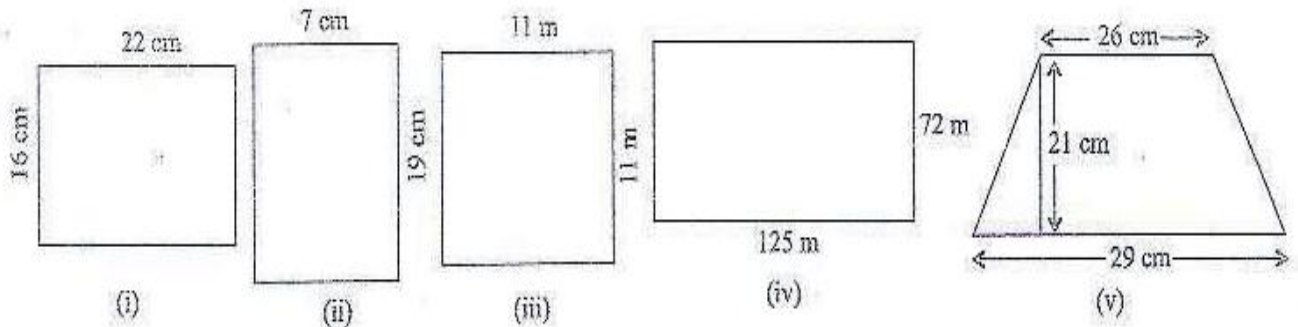
- 24 . If two adjacent angles of a parallelogram are equal, what do you call such a parallelogram?
- 25 . The measure of an angle of a parallelogram is 70° . Find its remaining angles.
- 26 . The following quadrilaterals are parallelogram. Find the degree values of the unknowns, x , y , z .



- 27 . Can the following quadrilaterals be parallelograms? Justify your answer.



1. Find the area of each figure.



2. One of the parallel side of a trapezium of area 252 cm^2 is 15 cm . The distance between the two parallel sides is 14 cm . Find the length of other parallel side.
3. If the height of the parallelogram is 37.3 m and the base is 9.3 m , what is the area of the parallelogram?
4. The area of a trapezium is 177.24 mm^2 . The dimensions of two parallel sides are 28.9 mm and 13.3 mm . Find the distance between the parallel sides.
5. The parallel sides of a trapezium are 26 cm and 30 cm . The altitude to the base 30 cm is 21 cm . Find the area of the trapezium.
6. What is the area of a square with perimeter 44 cm ?
7. The base of the rectangle is 22 cm and the area is 484 cm^2 , what is the height of the rectangle?
8. If the base of the rectangle is 29.8 mm and the area is 1206.9 mm^2 , what is the perimeter of the rectangle?
9. Find the area of a parallelogram with base 20 cm , side length 17 cm and height 15 cm .
10. A rectangular garden is 60 m long and 16 m broad. A path of uniform width of 2 m surrounds the garden inside it. Find the area of the path and the remaining area of the garden. Also, find the cost of paving the path with bricks at ₹ 20 per square metre.

11. An architect planned a house for Mrs. Kamra as shown in the figure 11.2. Find the total area of the house. Also find the area of:

- | | |
|-------------------|--------------|
| (i) Bedroom | (ii) Kitchen |
| (iii) Dining room | (iv) Lobby |

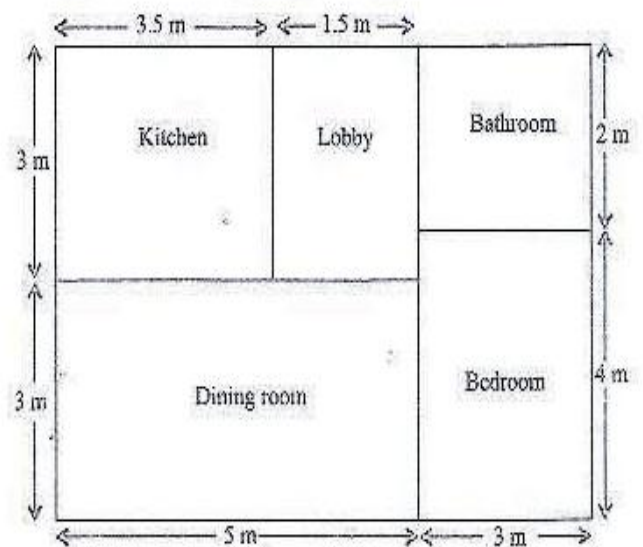
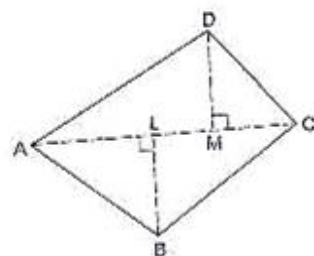


Fig. 11.2

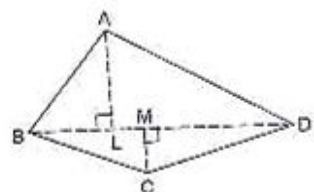
1. Find the volume, curved surface area and total surface area of each of the cylinders whose dimensions are:
 - (i) radius of the base = 7 cm and height = 50 cm
 - (ii) radius of the base = 5.6 m and height = 1.25 m
 - (iii) radius of the base = 14 dm and height = 15 m
2. A milk tank is in the form of a cylinder whose radius is 1.5 m and height is 10.5 m. Find the quantity of milk in litres that can be stored in the tank.
3. A wooden cylindrical pole is 7 m high and its base radius is 10 cm. Find its weight if the wood weighs 225 kg per cubic metre.
4. Find the height of the cylinder whose volume is 1.54 m^3 and diameter of the base is 140 cm?
5. The volume of a circular iron rod of length 1 m is 3850 cm^3 . Find its diameter.
6. A closed cylindrical tank of diameter 14 m and height 5 m is made from a sheet of metal. How much sheet of metal will be required?
7. The circumference of the base of a cylinder is 88 cm and its height is 60 cm. Find the volume of the cylinder and its curved surface area.
8. The lateral surface area of a cylinder of length 14 m is 220 m^2 . Find the volume of the cylinder.
9. The volume of a cylinder of height 8 cm is 1232 cm^3 . Find its curved surface area and the total surface area.
10. The radius and height of a cylinder are in the ratio 7 : 2. If the volume of the cylinder is 8316 cm^3 , find the total surface area of the cylinder.
11. The curved surface area of a cylinder is 4400 cm^2 and the circumference of its base is 110 cm. Find the volume of the cylinder.
12. A particular brand of talcum powder is available in two packs, a plastic can with a square base of side 5 cm and of height 14 cm, or one with a circular base of radius 3.5 cm and of height 12 cm. Which of them has greater capacity and by how much?
13. Find the cost of painting 15 cylindrical pillars of a building at ₹ 2.50 per square metre if the diameter and height of each pillar are 48 cm and 7 metres respectively.
14. A rectangular vessel 22 cm by 16 cm by 14 cm is full of water. If the total water is poured into an empty cylindrical vessel of radius 8 cm, find the height of water in the cylindrical vessel.
15. A piece of ductile metal is in the form of a cylinder of diameter 1 cm and length 11 cm. It is drawn out into a wire of diameter 1 mm. What will be the length of the wire so obtained?
16. A solid cube of metal each of whose sides measures 2.2 cm is melted to form a cylindrical wire of radius 1 mm. Find the length of the wire so obtained.
17. How many cubic metres of earth must be dug out to sink a well which is 20 m deep and has a diameter of 7 metres? If the earth so dug out is spread over a rectangular plot 28 m by 11 m, what is the height of the platform so formed?
18. A well of inner diameter 14 m is dug to a depth of 12 m. Earth taken out of it has been evenly spread all around it to a width of 7 m to form an embankment. Find the height of the embankment so formed.
 Hint. Required height = $\frac{\text{volume of earth taken out}}{\pi \times [(14)^2 - (7)^2]}$
19. A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of the road roller is 84 cm and its length is 1 m.

EXERCISE 18B

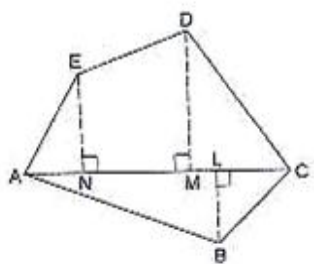
1. In the given figure, $ABCD$ is a quadrilateral in which $AC = 24$ cm, $BL \perp AC$ and $DM \perp AC$ such that $BL = 8$ cm and $DM = 7$ cm. Find the area of quad. $ABCD$.



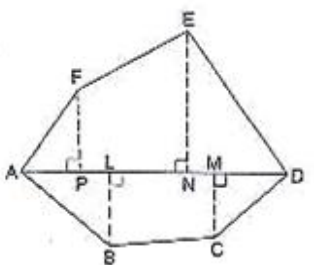
2. In the given figure, $ABCD$ is a quadrilateral-shaped field in which diagonal BD is 36 m, $AL \perp BD$ and $CM \perp BD$ such that $AL = 19$ m and $CM = 11$ m. Find the area of the field.



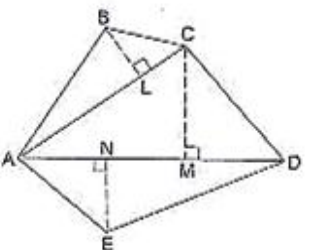
3. Find the area of pentagon $ABCDE$ in which $BL \perp AC$, $DM \perp AC$ and $EN \perp AC$ such that $AC = 18$ cm, $AM = 14$ cm, $AN = 6$ cm, $BL = 4$ cm, $DM = 12$ cm and $EN = 9$ cm.



4. Find the area of hexagon $ABCDEF$ in which $BL \perp AD$, $CM \perp AD$, $EN \perp AD$ and $FP \perp AD$ such that $AP = 6$ cm, $PL = 2$ cm, $LN = 8$ cm, $NM = 2$ cm, $MD = 3$ cm, $FP = 8$ cm, $EN = 12$ cm, $BL = 8$ cm and $CM = 6$ cm.



5. Find the area of pentagon $ABCDE$ in which $BL \perp AC$, $CM \perp AD$ and $EN \perp AD$ such that $AC = 10$ cm, $AD = 12$ cm, $BL = 3$ cm, $CM = 7$ cm and $EN = 5$ cm.



6. Find the area enclosed by the given figure $ABCDEF$ as per dimensions given herewith.

