

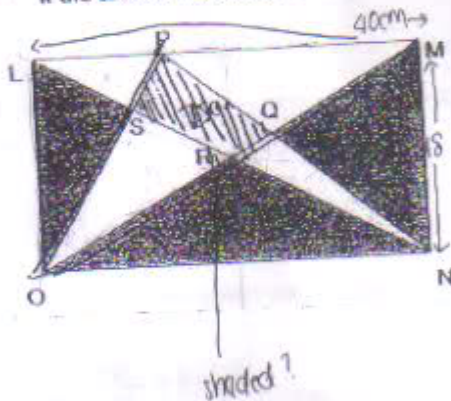
3. 8 children donated 88 pencils to a children's home. Each child donated a different number of pencils. If the largest number donated by one of the children was 15, what was the smallest possible number of pencils donated by one of the children?

$$88 - 15 = 73$$

$$73 \div 7 = 10$$

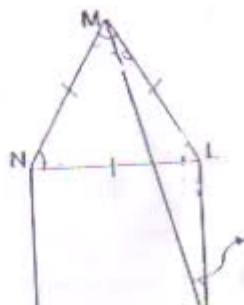
Ans : 10 pencils

4. LMNO is a rectangle with length 40 cm and breadth 18 cm. If the area of PQRS is 75 cm^2 , what is the area of the unshaded part?



Ans : _____ cm^2

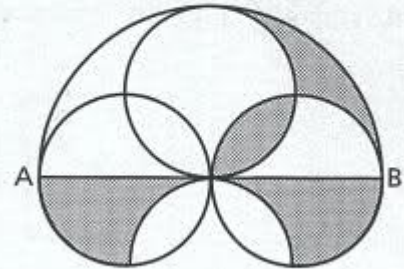
5. In the figure below, not drawn to scale, JKL is a square and LMN is an equilateral triangle. Find $\angle a$.



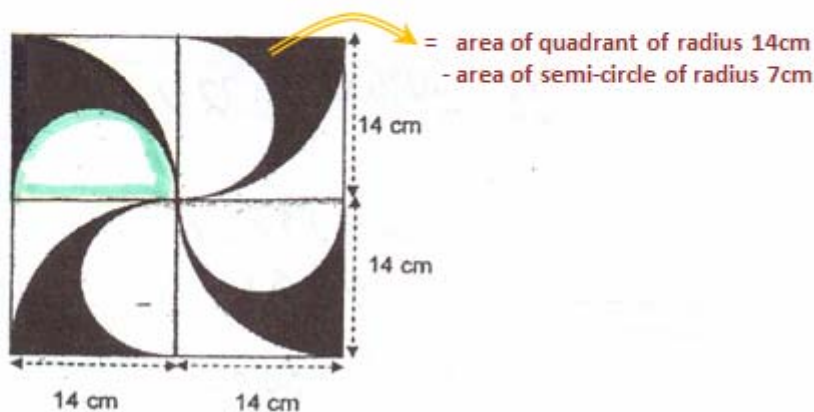
$$(180 - 150) \div 2 = 15$$

Ans: 15°

5. The figure is made up of 3 equal circles and a semicircle. The diameter of the semicircle, AB, has the length of 28 cm. Find the total shaded area of the figure. (Take $\pi = \frac{22}{7}$)

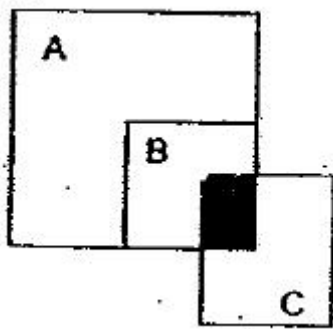


15. The figure below shows a pattern made up of 4 identical squares, 4 semicircles and 4 quadrants. Using π as $\frac{22}{7}$, calculate
- the total area of the shaded regions,
 - the total perimeter of the shaded regions.

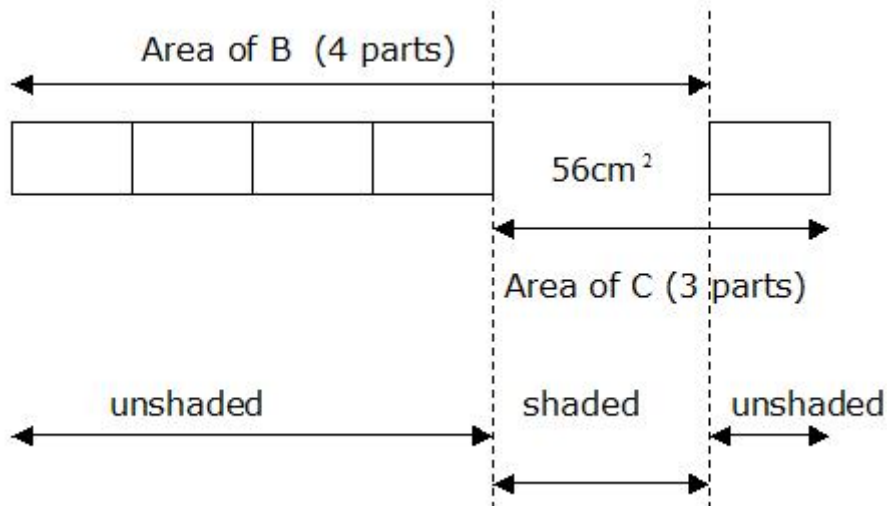


The figure below is made up of a big circle, square and a small circle. The area of the square is 400 square cm. Find the area of the shaded region. (Correct your answer to 2 decimal places)

The figure below is made up of 2 squares and a rectangle. The ratio of the area of A to the area of B to the area of C is 9:4:3. The ratio of the unshaded part of B to the unshaded part of C is 4:1. If the shaded part is 56 square cm, find the area of A that is not covered by B.



Solution



(C) 3 parts --> 56 sq cm + 1 unit

(multiply by 4)

(C) 12 parts --> 224 sq cm + 4 units

(B) 4 parts --> 56 sq cm + 4 units

12 parts - 4 parts --> 224 sq cm - 56 sq cm

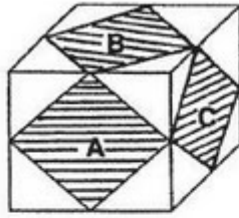
8 parts --> 168 sq cm

1 part --> 168 sq cm divided by 8 = 21 sq cm

(A - B) 5 parts --> 5 x 21 sq cm = 105 sq cm

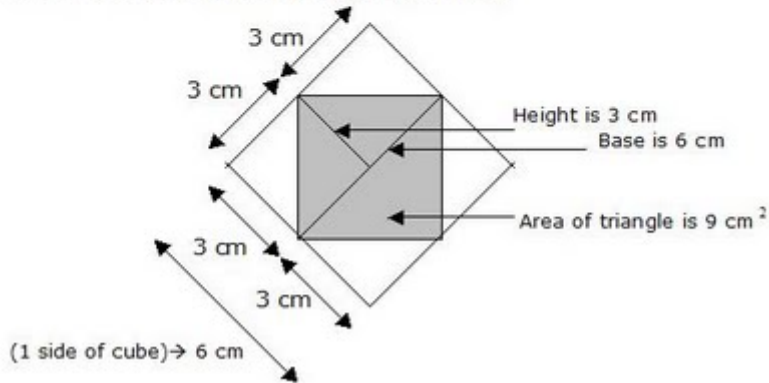
Answer: 105 square cm

The figure shows a cube with 3 painted parts A, B and C. These painted parts are of the same area and they are touching the midpoints of the sides of the cube. The total area of the painted parts is 54 square cm. Find the volume of the cube.



Solution

View of one face of the cube that is painted...



3 painted parts on 3 faces of the cube ----- 54 square cm

1 painted part on 1 face of the cube
54 square cm divided by 3 = 18 square cm

Area of 1 triangle is 18 square cm divided by 2
= 9 square cm

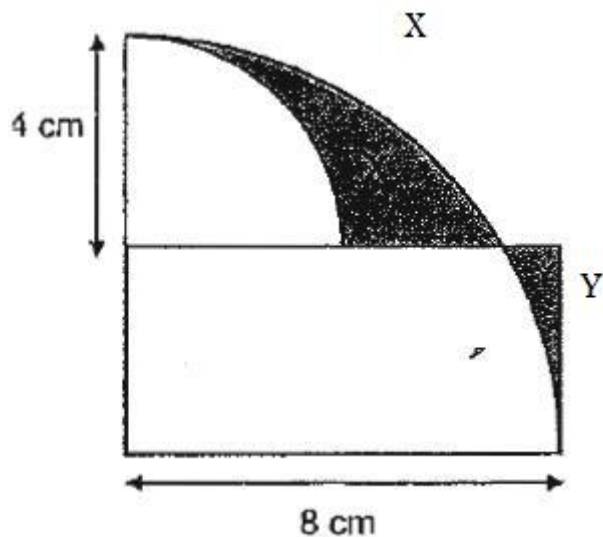
For area of triangle to be 9 square cm, the base has to be 6 cm and height has to be 3 cm as worked out below
($\frac{1}{2} \times 6 \text{ cm} \times 3 \text{ cm} = 9 \text{ square cm}$)

1 side of the cube is therefore 6 cm as seen from above diagram.

Volume of cube
($6 \times 6 \times 6$) cubic cm = 216 cubic cm

Answer: 216 cubic cm

The figure below shows 2 quarter circles and a rectangle. The radius of the big quarter circle is 8 cm. The radius of the small quarter circle is 4 cm. Find the difference in area between the two shaded parts of X and Y. Use the calculator value of pi and give your answer correct to 1 decimal place.



Solution

Area of rectangle ----- $8 \text{ cm} \times 4 \text{ cm} = 32 \text{ square cm}$

Area of large quadrant -----

$$\left(\frac{1}{4}\right) \times \pi \times 8\text{cm} \times 8 \text{ cm} \\ = 16(\pi) \text{ square cm}$$

Area of small quadrant -----

$$\left(\frac{1}{4}\right) \times (\pi) \times 4\text{cm} \times 4\text{cm} \\ = 4(\pi) \text{ square cm}$$

Area of Large quadrant - Area of small quadrant -----

$$16(\pi) \text{ square cm} - 4(\pi) \text{ square cm} \\ = 12(\pi) \text{ square cm}$$

Difference between the two shaded parts X and Y -----

$$(12 \times \pi) \text{ square cm} - 32 \text{ square cm} \\ \text{approximately ----- } 5.7 \text{ square cm}$$

Answer: 5.7 square cm

The shaded figure below is formed by semicircles, quarter circles and straight lines of 15 cm each. For each of the following, use the calculator value of π to find

- the perimeter of the shaded figure, correct to 2 decimal places.
- the area of the shaded figure, correct to 2 decimal places.