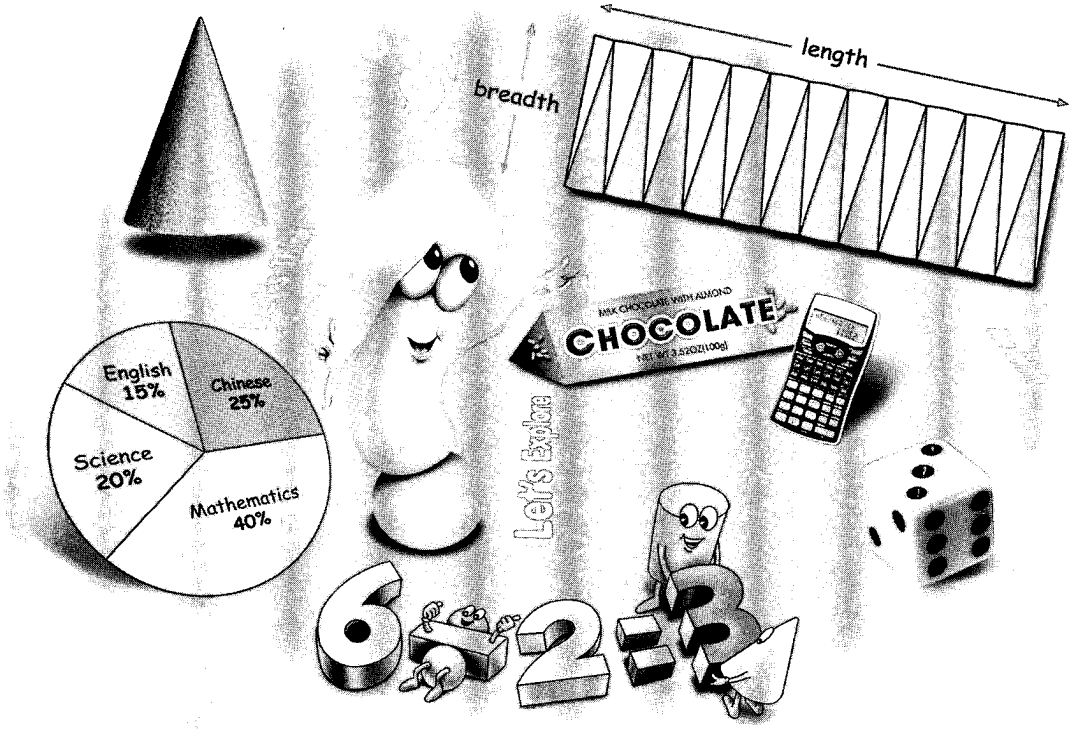
New Syllabus

Primary Mathematics

6B WORKBOOK 1



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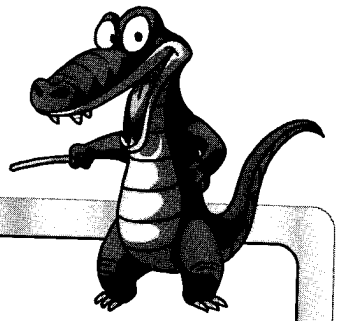
WORKSHEET 19

Date:

Circle



1. Draw the following circles with the given radii. Indicate on each circle one of the radius.

(a) radius = 2 cm

(b) radius = 3 cm

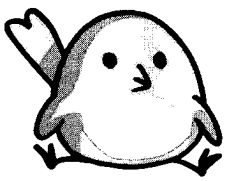
(c) radius = 3.5 cm

2. Draw the circles whose diameters are as given.

(a) diameter = 8 cm

(b) diameter = 5 cm

(c) diameter = 6 cm



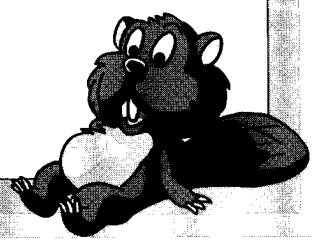
3. Find the circumference of the following circles. (Take $\pi = 3.14$)

(a) Diameter = 7 cm

(b) Diameter = 5 cm

(c) Radius = 5 cm

(d) Radius = 3 cm



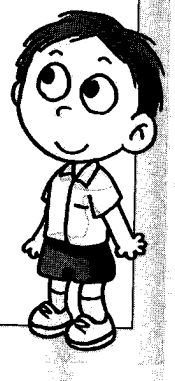
4. Find the circumference of the following circles. (Take $\pi = \frac{22}{7}$)

(a) Diameter = 14 cm

(b) Diameter = 35 cm

(c) Radius = 49 cm

(d) Radius = 28 cm



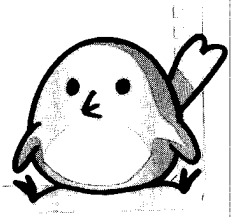
5. Find the circumference of each of the following circles . Use the value of π stored in the calculator. Give your answer correct to 2 decimal places.

(a) Diameter = 15 cm

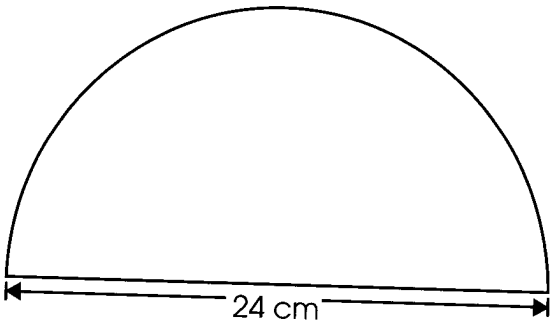
(b) Diameter = 18 cm

(c) Radius = 16 cm

(d) Radius = 20 cm



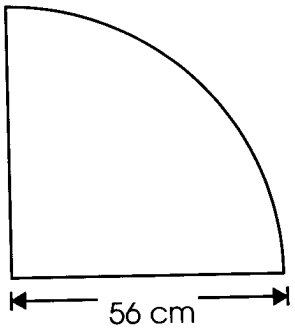
6. Find the perimeter of the semicircle as shown below.



(a) Take $\pi = 3.14$ and give the answer correct to 1 decimal place.

(b) Use the value of π stored in the calculator and give your answer correct to 2 decimal places.

7. Find the perimeter of the quadrant as shown below.



(a) Take $\pi = \frac{22}{7}$

(b) Use $\pi = 3.14$ and give your answer correct to the nearest whole number.

WORKSHEET 20

Date:

Area of a Circle

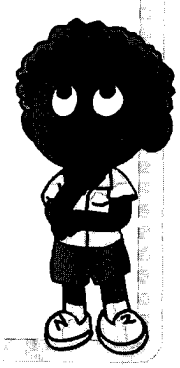
1. Find the area of each circle. (Take $\pi = 3.14$)

(a) Radius = 4 cm

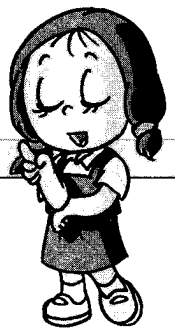
(b) Radius = 6 cm

(c) Diameter = 10 cm

(d) Diameter = 14 cm



2. Find the area of each circle. (Take $\pi = \frac{22}{7}$)



(a) Radius = 21 cm

(b) Radius = 28 cm

(c) Diameter = 28 cm

(d) Diameter = 56 cm

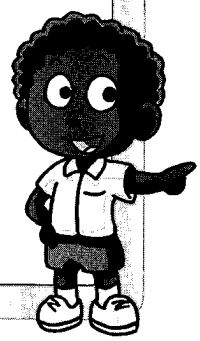
3. Find the area of each circle using the value of π stored in the calculator. Give your answer correct to 2 decimal places.

(a) Radius = 15 cm

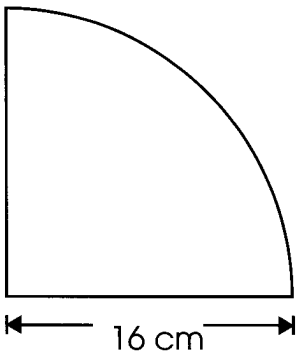
(b) Radius = 17 cm

(c) Diameter = 24 cm

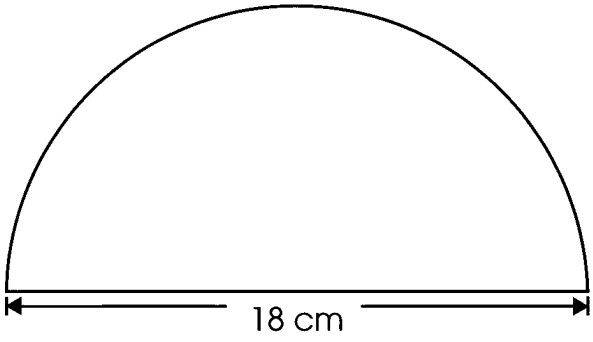
(d) Diameter = 18 cm



4. Find the area of the quadrant of a circle with a radius of 16 cm.
Give your answer correct to 2 decimal places.



5. Find, using a calculator, the area of the semicircle as shown below.
Give your answer correct to 2 decimal places.

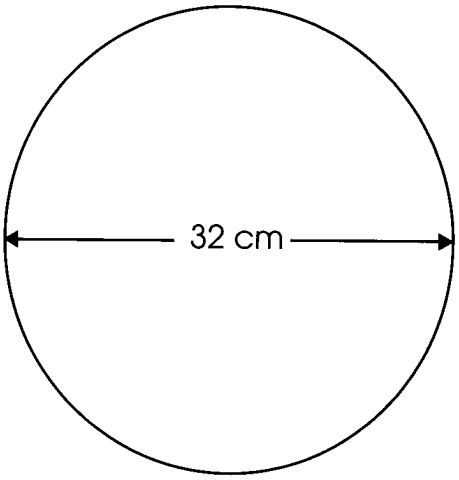


Practice 7

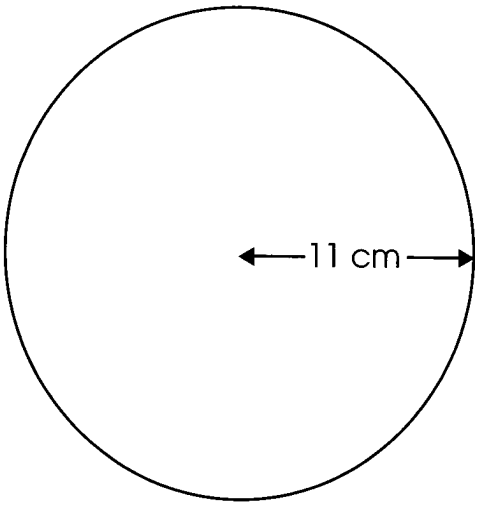
Date: _____

1. Find the circumference and area of each of the following circles.
Take $\pi = 3.14$.

(a)



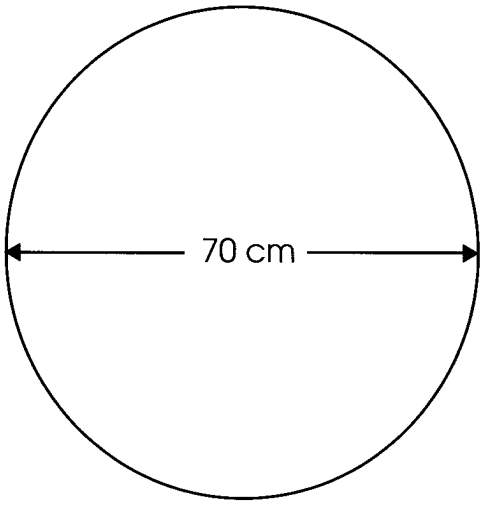
(b)



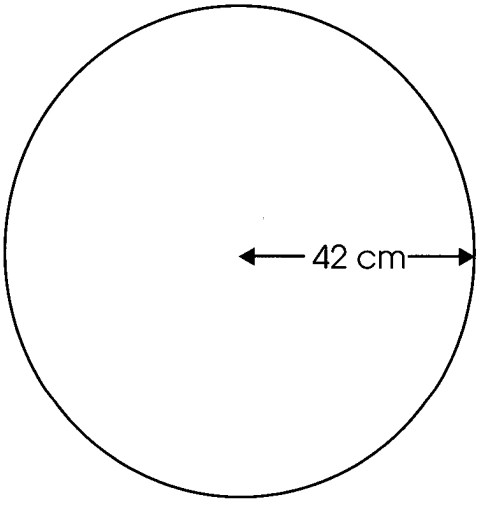
2. Find the circumference and area of each of the following circles.

Take $\pi = \frac{22}{7}$.

(a)

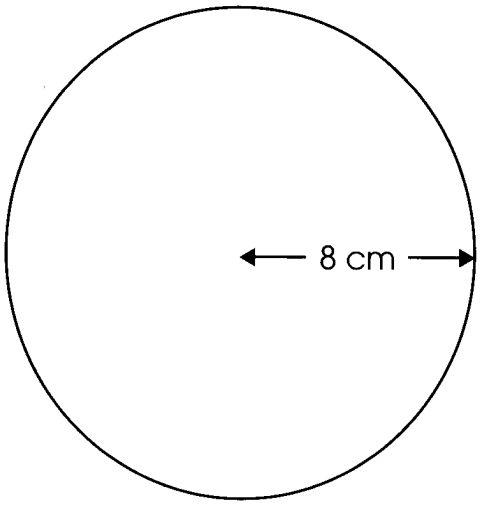


(b)

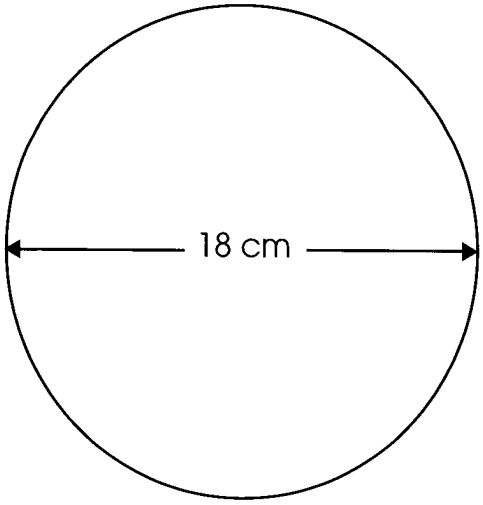


3. Find the circumference and area of each of the following circles. Use the value of π stored in the calculator. Give your answer correct to 2 decimal places.

(a)

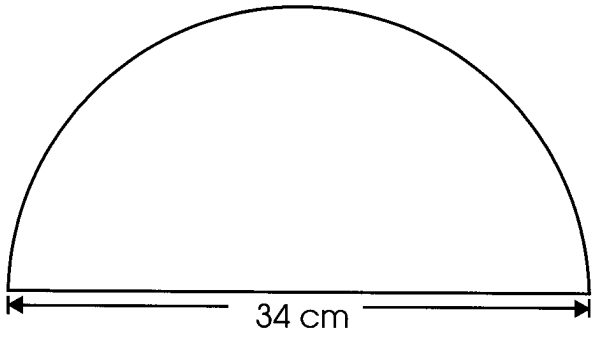


(b)

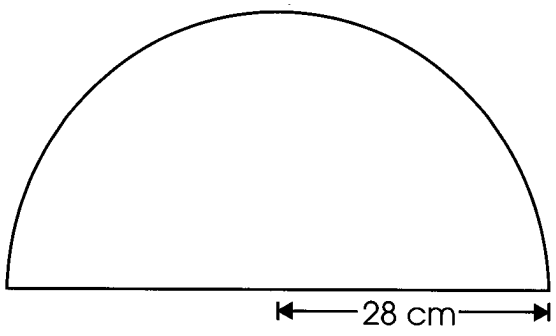


4. Find the perimeter and area of each of the following semicircles. Take $\pi = 3.14$.

(a)

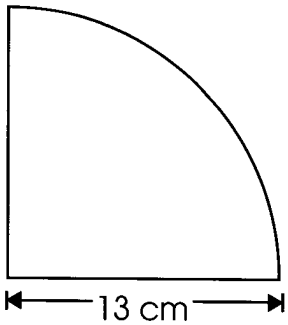


(b)

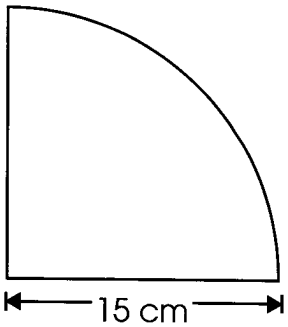


5.  Find the perimeter and area of each of the following quadrants. Use the value of π stored in the calculator. Give your answer correct to 2 decimal places.

(a)



(b)



8 Area and Perimeter

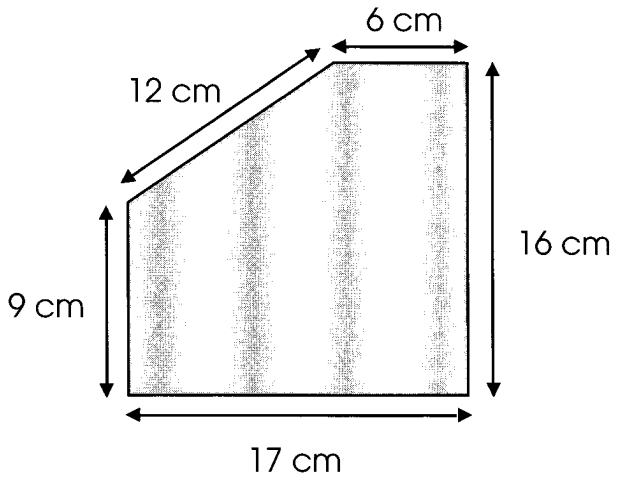
WORKSHEET 21

Date:

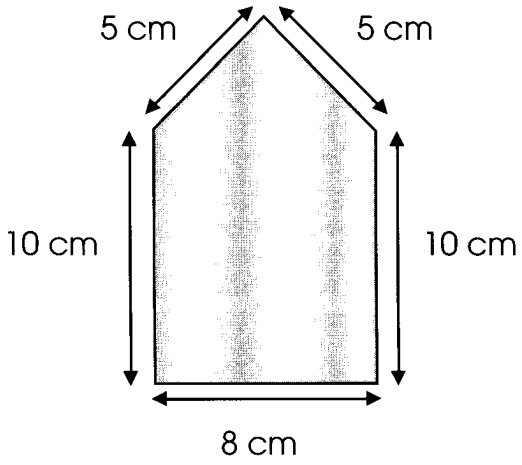
Perimeter of a Composite Figure

1. Find the perimeter of each of the following figures:

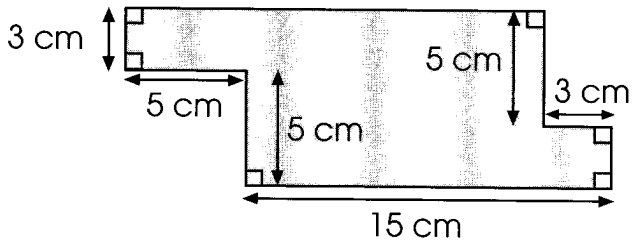
(a)



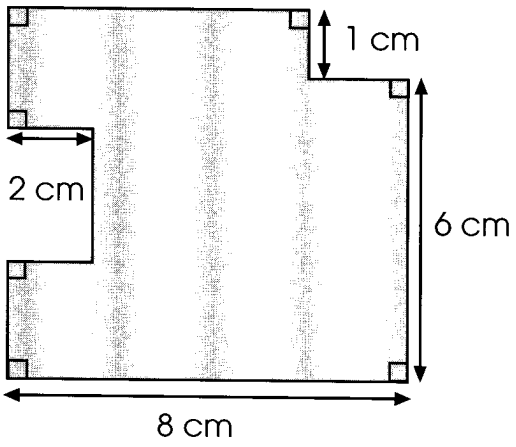
(b)



(c)

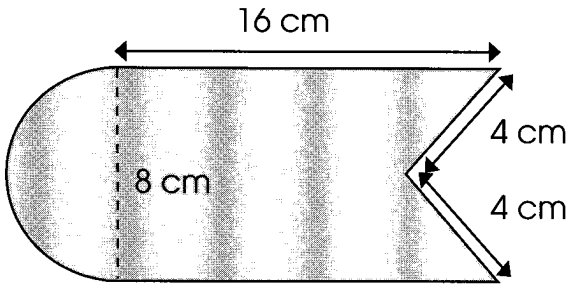


(d)



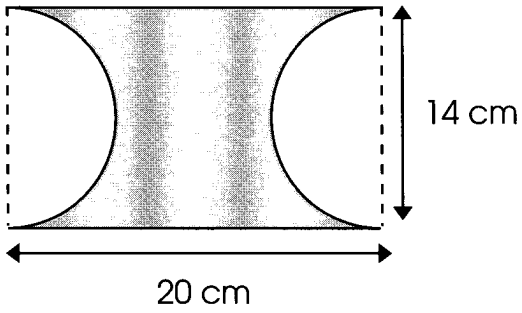
2. Find the perimeter of each of the following figures:

(a) The figure is made up of a semicircle and some straight lines.
(Take $\pi = 3.14$)

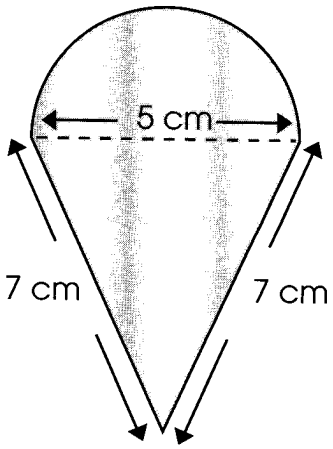


(b) The figure is made up of two semicircles and two lines.

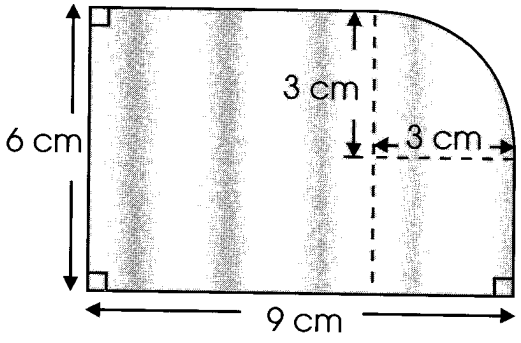
(Take $\pi = \frac{22}{7}$)



(c) The figure is made up of a semicircle and 2 straight lines. Use the value of π stored in the calculator. Give your answer correct to 2 decimal places.



(d) The figure is made up of a quadrant and some straight lines. Use the value of π stored in the calculator. Give your answer correct to 2 decimal places.



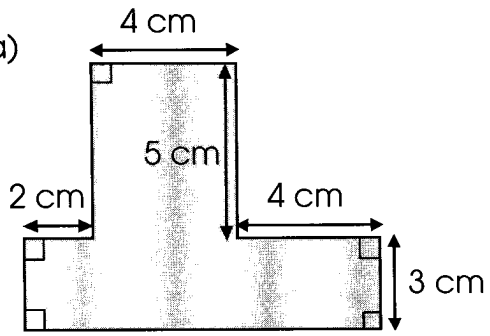
WORKSHEET 22

Date:

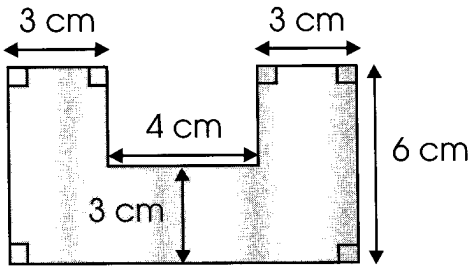
Area of a Composite Figure

1. Find the area of each of the following shaded figures:

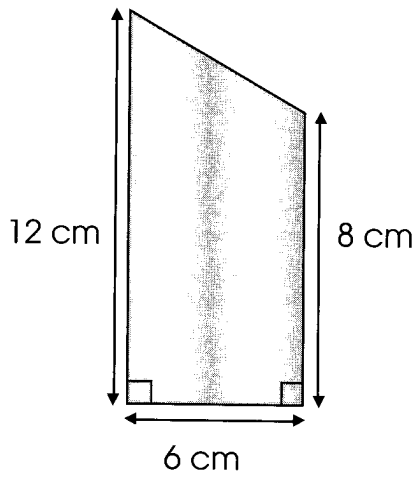
(a)



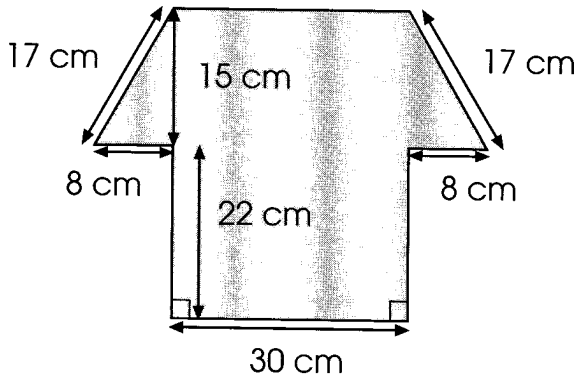
(b)



(c)

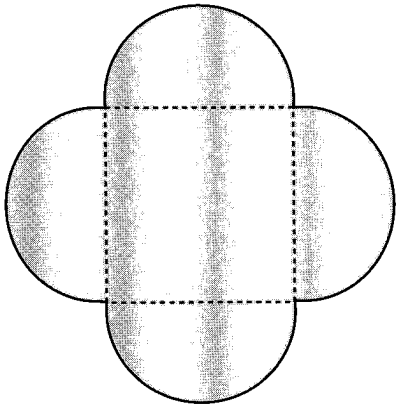


(d)

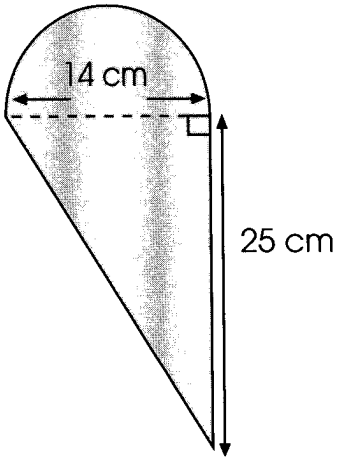


2. Find the area of each of the following shaded figures. (Take $\pi = \frac{22}{7}$)

(a) The figure is made up of 4 semicircles with similar size and a square. The radius of the semicircle is 14 cm.

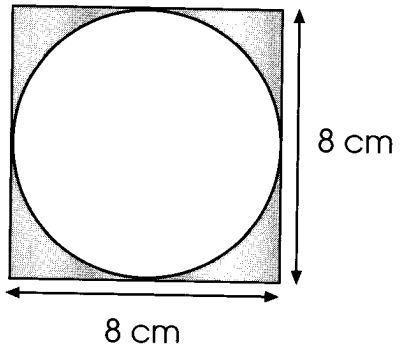


(b) The figure is made up of a semicircle and a triangle.

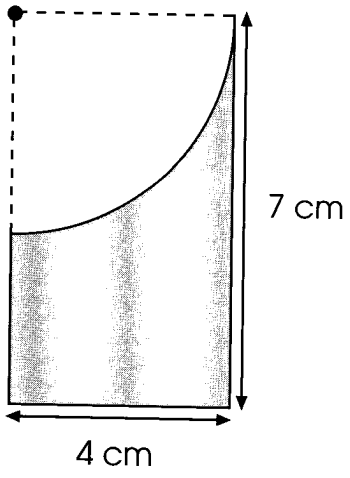


3. Find the area of the shaded region for each figure. Use the value of π stored in the calculator and give your answers correct to 2 decimal places.

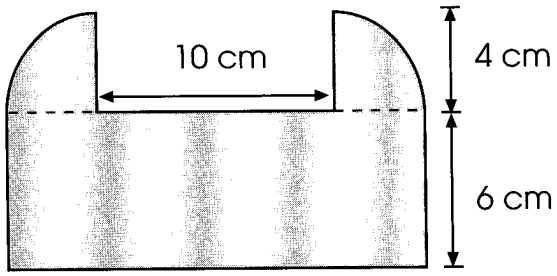
(a) The figure shows that a circle is cut out from a square.



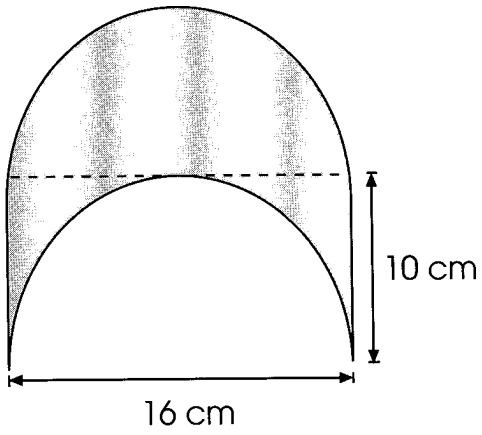
(b) The figure shows that a quadrant is cut out from a rectangle.



(c) The figure is made up of 2 quadrants and a rectangle.



(d) The upper part of the figure is a semicircle and the lower part of the figure is a rectangle with a semicircle removed.



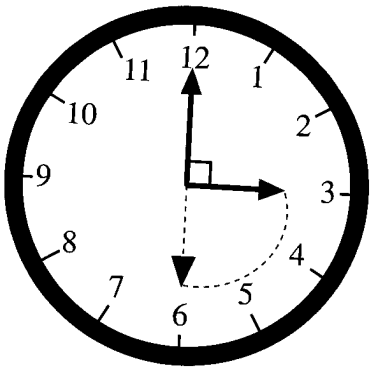
WORKSheet 23

Word Problems

Date:

1. A man wants to make a ring with a diameter of 56 cm from a piece of wire. What is the length of the wire needed? (Take $\pi = \frac{22}{7}$)

2. The hour hand of a clock is 10 cm long. Find the distance travelled by the tip of the hour hand in 3 hours. (Take $\pi = 3.14$)



3. The minute hand of a clock is 6 cm long. Find the distance travelled by the tip of the minute hand for 30 minutes. (Take $\pi = 3.14$)

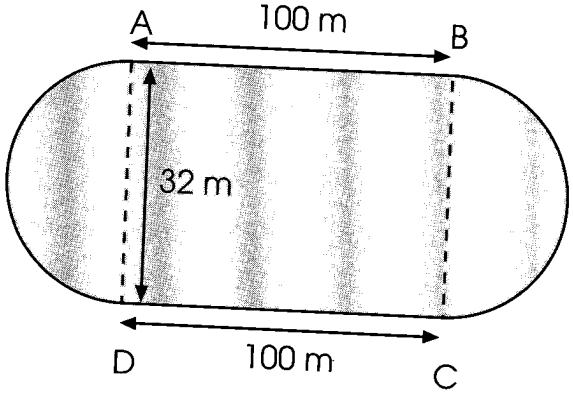
4.  Peter travels on his bicycle. The radius of the wheels of his bicycle is 32 cm. The wheels of Peter's bicycle rotate in 90 rounds in one minute. How long does Peter travel in one minute? Give your answer correct to the nearest **metre**.

5. The diagram shows the running track of a school field. It has 2 straight tracks of 100 m each. It also has 2 semicircular tracks with a diameter of 32 m. Find

(a) the perimeter of the track.

(b) the area of the whole field.

(Take $\pi = 3.14$)

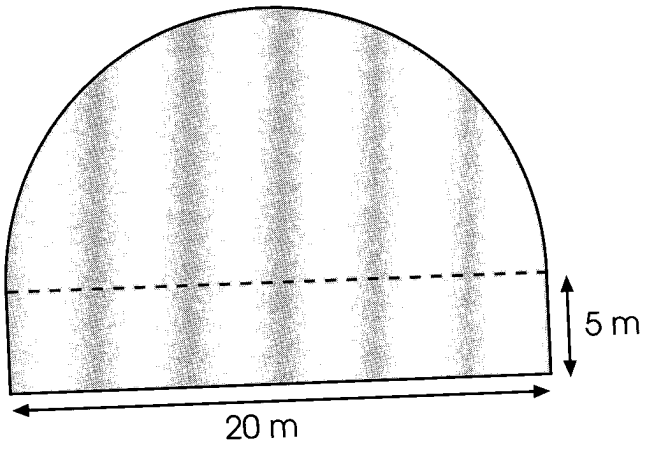


6. The diagram below shows the shape of a stage in a hall. It is made up of a semicircle and a rectangle. Find

(a) the area of the stage,

(b) the perimeter of the stage.

(Take $\pi = 3.14$)



Practice 8

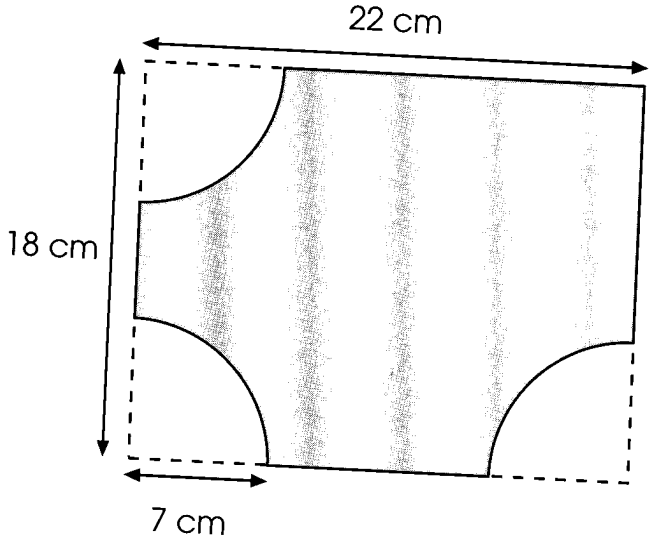
Date:

1. A rectangle piece of paper, measuring 22 cm by 18 cm, has three of its corners cut off. The cut off pieces are three quadrants each of radius 7 cm. Find

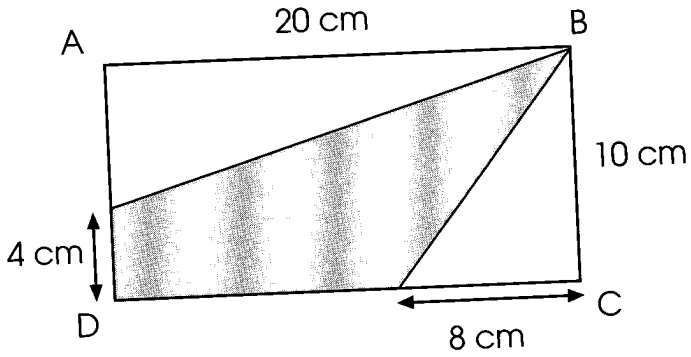
(a) the perimeter of the remaining paper,

(b) the area of the remaining paper.

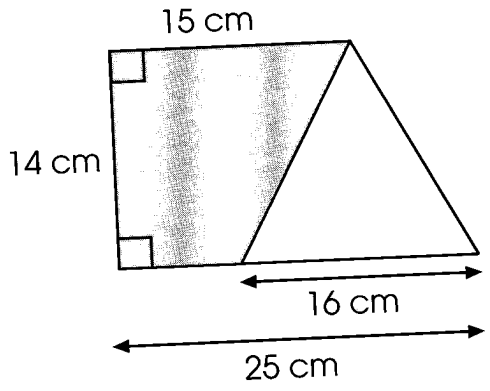
(Take $\pi = \frac{22}{7}$)



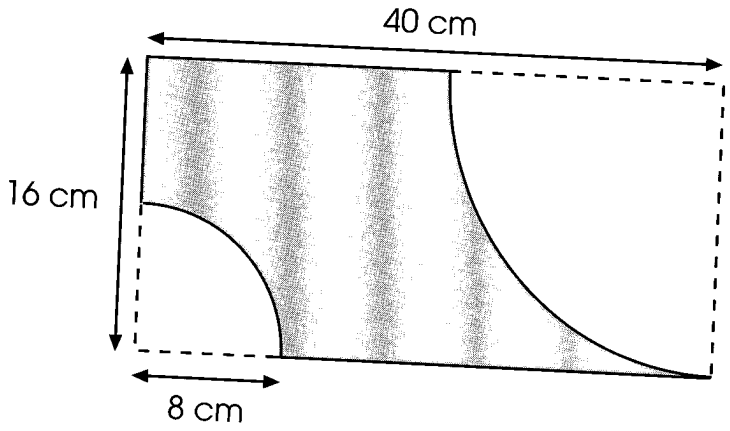
2. In the figure below, ABCD is a rectangle. Find the area of the shaded part.



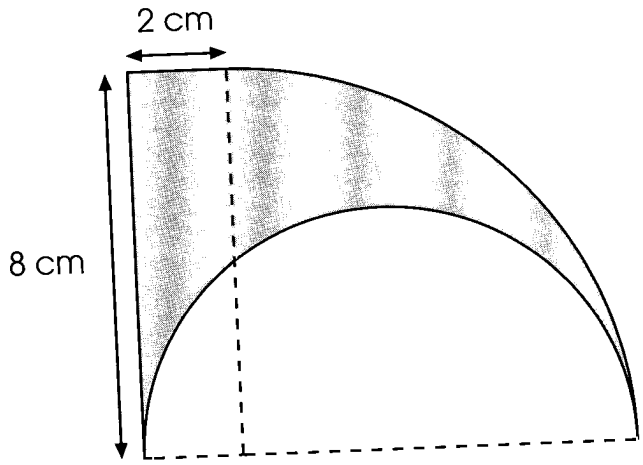
3. Find the area of the shaded part.



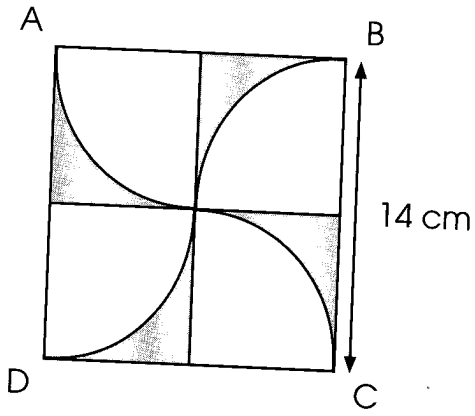
4. Two quadrants are removed from two corners of a rectangle 40 cm by 16 cm as shown in the figure. What is the perimeter of the shaded part? (Take $\pi = 3.14$)



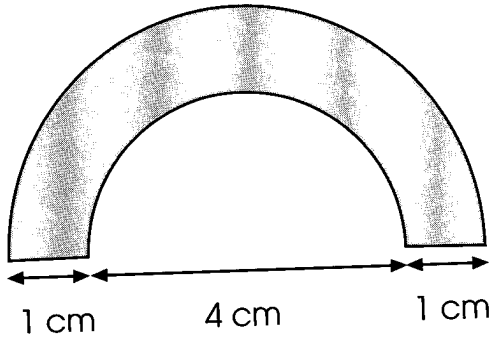
5. A semicircle is cut off from a piece of paper. The original piece of paper is made up of a rectangle and a quadrant. Find the shaded area. (Take $\pi = 3.14$)



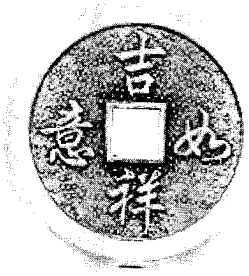
6. ABCD is a square of side 14 cm. There are 4 quadrants in the square. Find the area of the shaded part in the diagram. Use the value of π stored in the calculator. Give your answer correct to 2 decimal places.



7. The figure shows that a smaller semicircle is cut out from a bigger semicircle. Find the perimeter and the area of the figure. Give your answer correct to the nearest cm.



8. The picture shows an ancient Chinese coin. The diameter of the outer circle is 30 mm and the length of the square hole is 5 mm. Find the area of the coin face. Give your answer correct to the nearest mm^2.



9 Volume

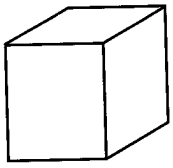
Date: _____

WORKSHEET 24

Find the Unknown Dimension of a Cube or a Cuboid

1. Find the length of one edge of each of the following cubes.

(a)

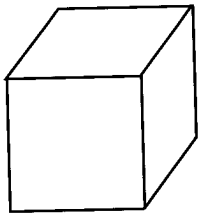


Volume = 64 m^3

Length = $\sqrt[3]{64}$ _____ m

= _____ m

(b)

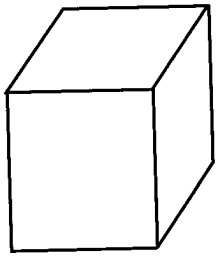


Volume = 343 m^3

Length = _____

= _____

(c)



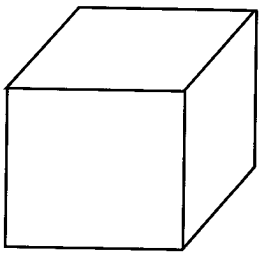
Volume = 1331 m^3

Length = _____

= _____

2. Find the length of one edge of each cube. Give your answer correct to 1 decimal place.

(a)

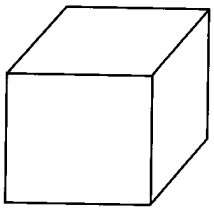


Volume = 865 cm^3

Length = $\sqrt[3]{865}$ _____ cm

≈ _____ cm

(b)

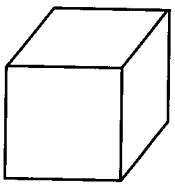


Volume = 642 cm^3

Length = _____

≈ _____

(c)



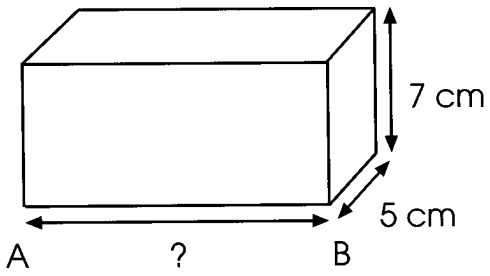
Volume = 369 cm^3

Length = _____

≈ _____

3. Find the length of the unknown edge of each of the following cuboids.

(a)

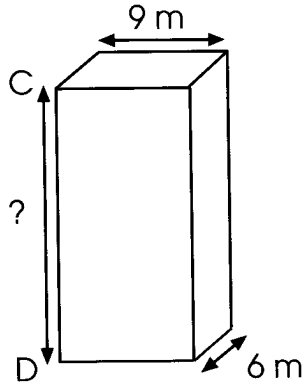


Volume = 455 cm^3

$AB = \frac{455}{7 \times 5}$ _____ cm

= _____ cm

(b)

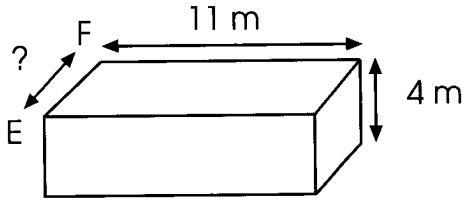


Volume = 810 m^3

CD = _____

= _____

(c)



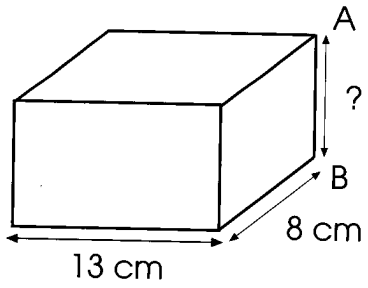
Volume = 308 m^3

EF = _____

= _____

4. Find the length of the unknown edge in each cuboid. Give your answer correct to the nearest cm.

(a)



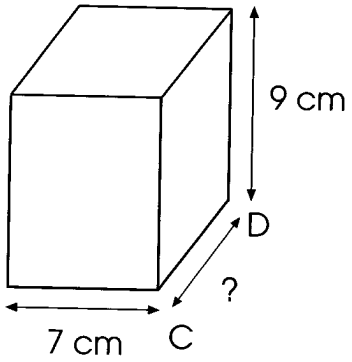
$AB = \dfrac{805}{13 \times 8}$

_____ cm

$\approx$ _____ cm

Volume = 805 cm^3

(b)

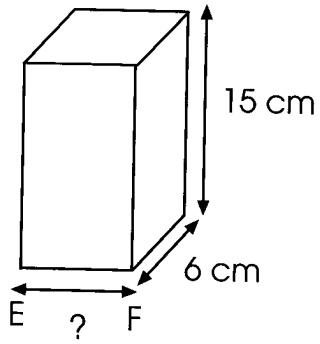


CD = _____

$\approx$ _____

Volume = 560 cm^3

(c)



EF = _____

$\approx$ _____

Volume = 673 cm^3

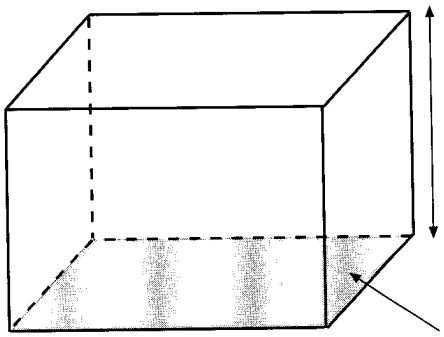
WORKSHEET 25

Date: _____

Base Area and Volume of a Cuboid

1. Find the volume of each cuboid.

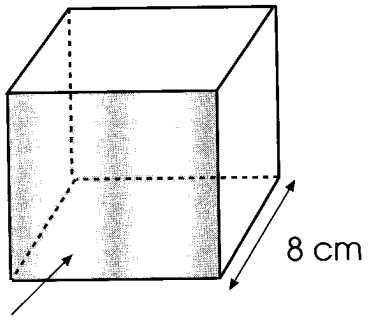
(a)



Volume = $\frac{45 \times 6}{}$ cm³

= _____ cm³

(b)

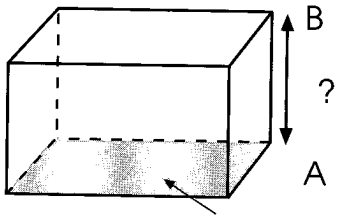


Volume = _____

= _____

2. Find the unknown edge of each cuboid.

(a)



Area = 54 cm^2

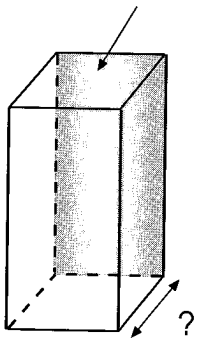
Volume = 378 cm^3

AB = $\frac{378}{54}$ _____ cm

= _____ cm

(b)

Area = 84 cm^2



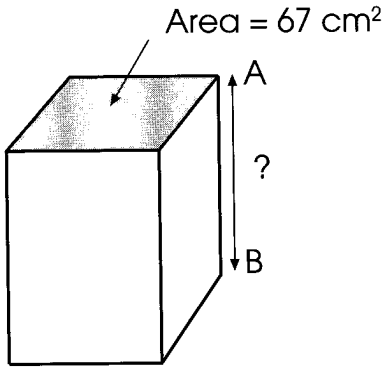
Volume = 672 cm^3

EF = _____

= _____

3. Find the unknown edge of each cuboid. Give your answer correct to the nearest cm.

(a)

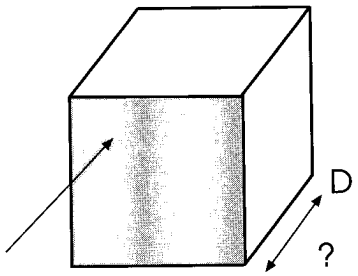


Volume = 935 cm³

$AB = \frac{935}{67}$ _____ cm

$\approx$ _____ cm

(b)



Area = 76 cm²

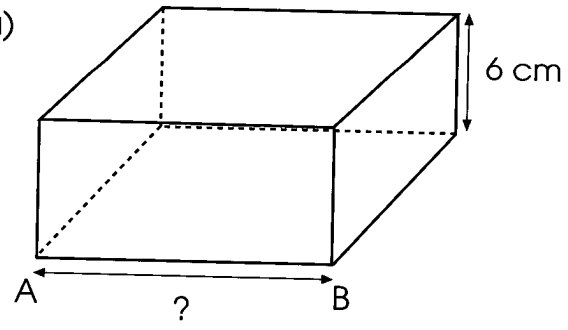
CD = _____

$\approx$ _____

Volume = 628 cm³

4. Each of the following cuboids has a square base. Find the length of the side of the square base.

(a)



Volume = 726 cm^3

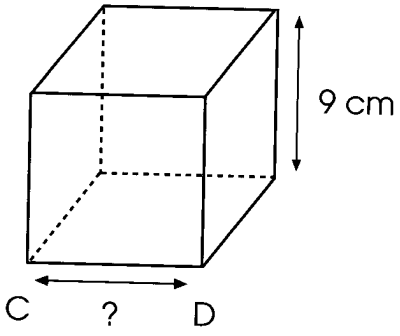
Base area $= \frac{726}{6}$

$=$ _____ cm^2

AB = _____

$=$ _____ cm

(b)



Volume = 1296 cm^3

Base area = _____

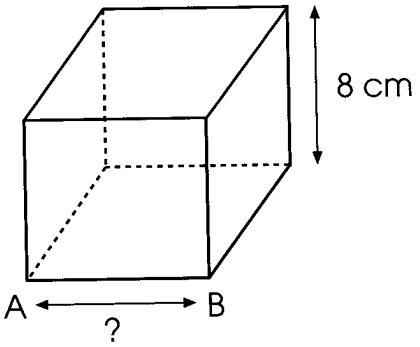
$=$ _____

CD = _____

$=$ _____

5. Each of the following cuboids has a square base. Find the length of each side of the square base. Give your answer correct to the nearest cm.

(a)



Volume = 1296 cm^3

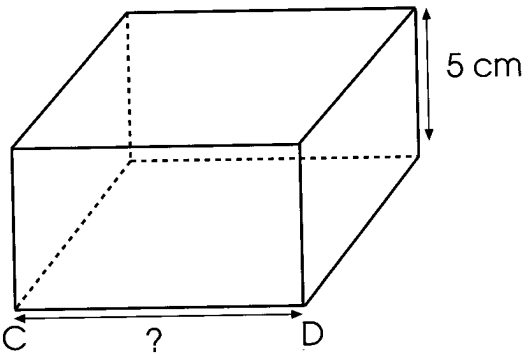
Base area = _____

= _____ cm^2

AB = _____

≈ _____ cm

(b)



Volume = 560 cm^3

Base area = _____

= _____

CD = _____

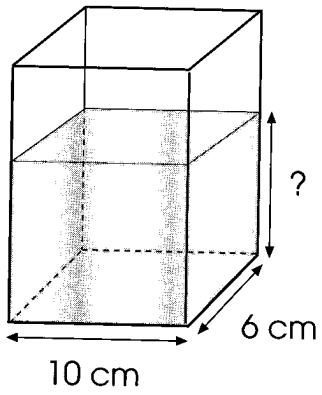
≈ _____

WORKSHEET 26

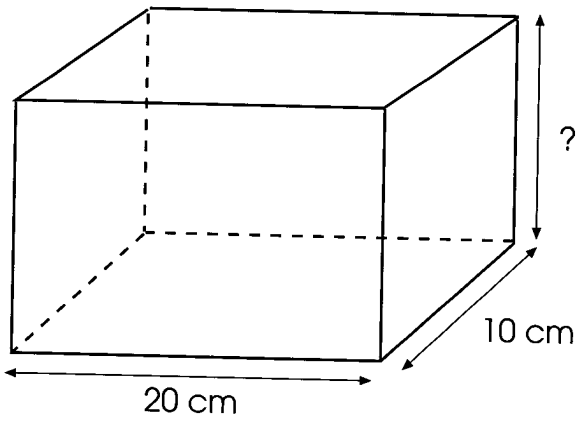
Date:

Word Problems

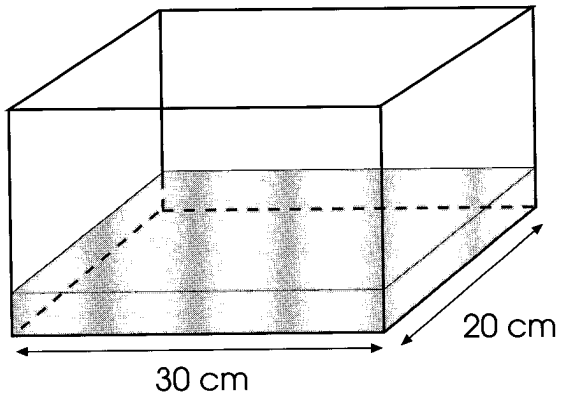
1. A rectangular container contains 540 cm^3 of water. Its length is 10 cm and its breadth is 6 cm. Find the height of the water level in the container.



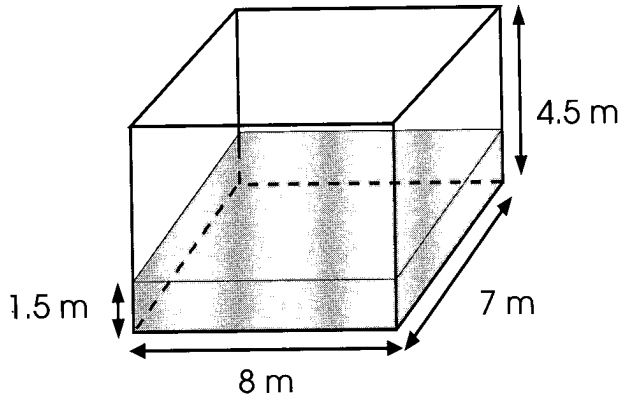
2. The base of a rectangular container is 20 cm long and 10 cm wide. Its capacity is 2.3 ℓ. Find the height of the container.



3. A rectangular container is 30 cm long and 20 cm wide. It holds 1.2 ℓ of water when it is $\frac{1}{8}$ full. What is the height of the container?

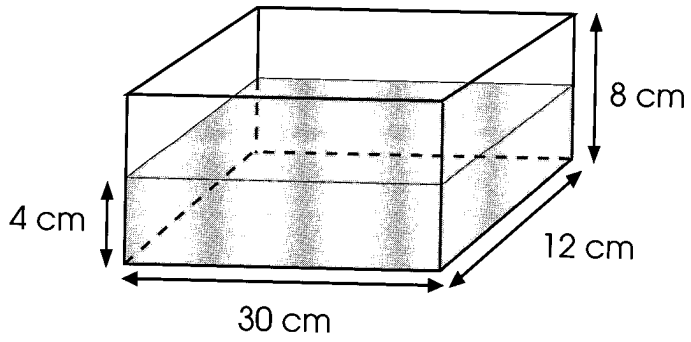


4. A rectangular tank of 8 m long, 7 m wide and 4.5 m deep contains water to a depth of 1.5 m. What is the volume of water in m^3 to be added to fill up the tank?

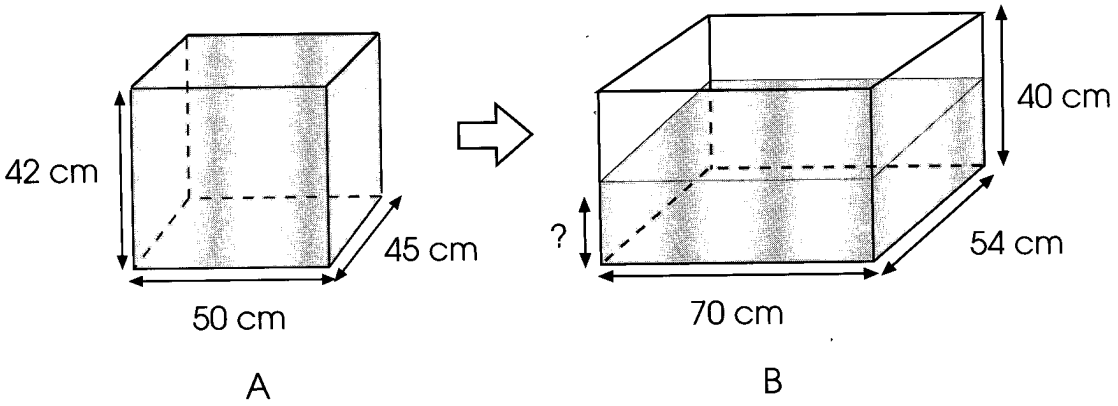


5. Sean poured 5.2 ℓ of lemonade into packets which were 5 cm long, 8 cm wide and 10 cm high. Each packet was completely filled with lemonade. How many packets were there?

6. A tank is 30 cm long, 12 cm wide and 8 cm high. The height of the water in the tank is 4 cm. If 720 cm^3 of water is poured into the tank, what is the new height of the water level in the tank?



7. A rectangular tank A that measured 50 cm by 45 cm by 42 cm is full of water. All of the water is then poured into another rectangular tank B that measures 70 cm by 54 cm by 40 cm. What is the depth of the water in Tank B?



Practice 9

Date:

1. The volume of a cube is 2744 cm^3. Find the length of each edge of the cube.

2. The volume of a cube is 735 cm^3. Find the length of each side of the cube. Give your answer correct to 2 decimal places.

3.  The volume of a cuboid is 1404 cm^3. The length of the cuboid is 13 cm and its breadth is 12 cm. Find its height.

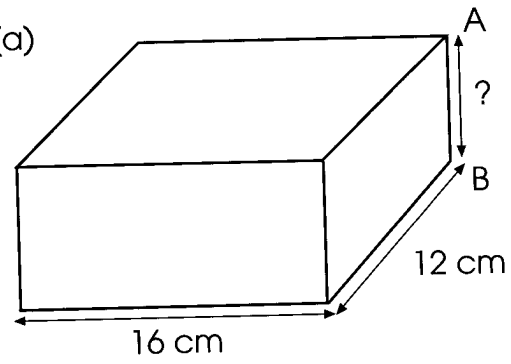
4.  A cuboid with length of 25 cm and height of 15 cm has a volume of 6750 cm^3. Find its breadth.

5.  A cuboid has a volume of 1920 cm^3. The area of its base is 320 cm^2. Find the height of the cuboid.

6.  A cuboid with a volume of 1215 cm^3 has a square base. The height of the cuboid is 15 cm. Find the length of each side of the square base.

7. Find the unknown edge of each cuboid. Give your answer correct to the nearest cm.

(a)

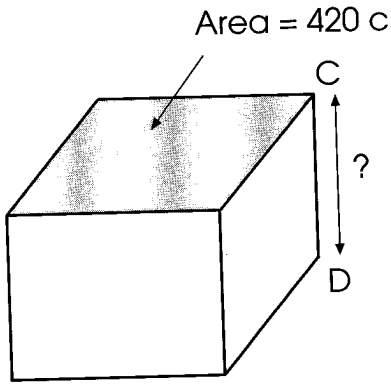


AB = _____

≈ _____ cm

Volume = 970 cm^3

(b)

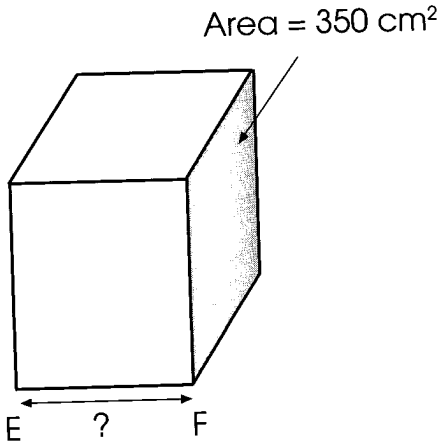


CD = _____

≈ _____ cm

Volume = 5100 cm^3

(c)

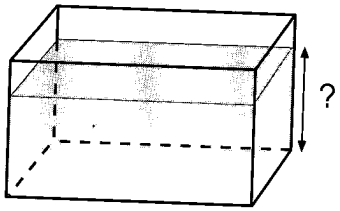


EF = _____

≈ _____ cm

Volume = 5640 cm^3

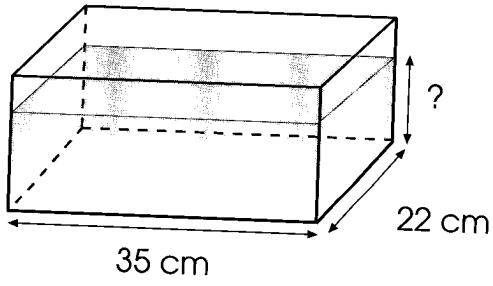
8. A rectangular container contains 1.5 ℓ of water. The area of the base of the container is 140 cm^2. Find the height of the water level. Give your answer correct to the nearest cm.



9. A rectangular tank is 35 cm long and 22 cm wide.

(a) What is the base area of the tank?

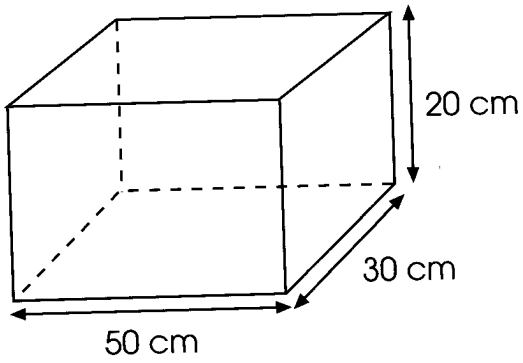
(b) When 15.4 ℓ of water is poured into the tank, what is the height of the water level?



10. An empty rectangular tank measures 50 cm by 30 cm by 20 cm. It is to be filled with water from a tap.

(a) How many litres of water are needed to fill up the tank?

(b) If water flows from the tap at a rate of 12 ℓ per minute, what is the height of the water level after 2 minutes?

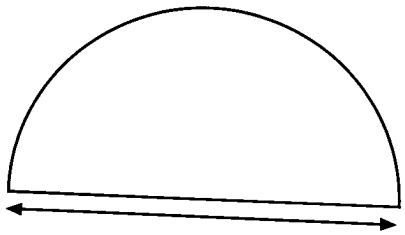


Revision 3A

Date:

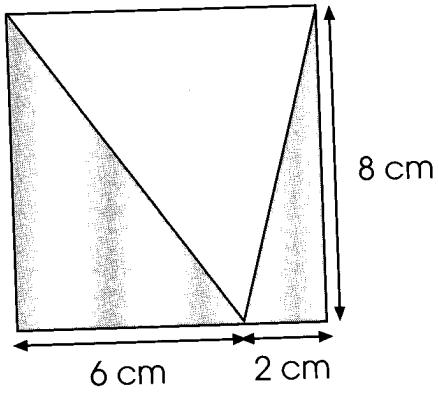
1. Find the circumference and area of a circle with a radius of 12 cm. (Take $\pi = 3.14$)

2. Find the perimeter of the semicircle of diameter 10 cm in terms of π.

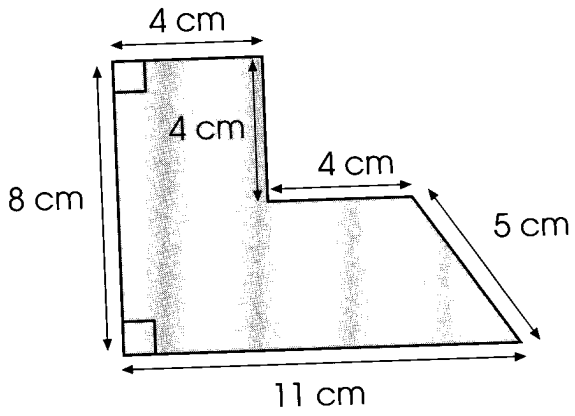


10 cm

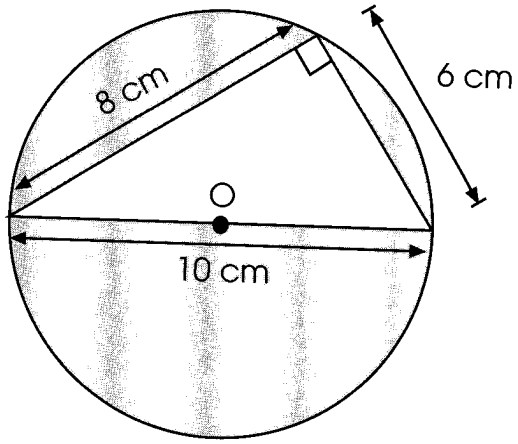
3. The figure shows a square of side 8 cm. What is the area of shaded region?



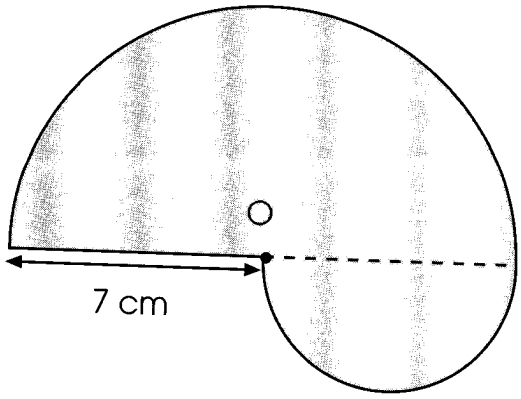
4. Find the area and perimeter of the figure.



5. O is the centre of the circle with diameter of 10 cm. Find the area of the shaded region. (Take $\pi = 3.14$)



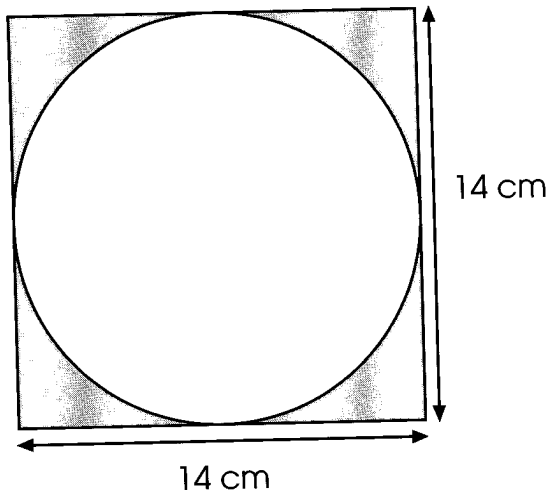
6. The figure is made up of two semicircles. O is the centre of the larger semicircle of radius 7 cm. Find the area of the figure. (Take $\pi = \frac{22}{7}$)



7. (a) Find the circumference of a circle that touches the four sides of a square of side 14 cm each.

(b) Find the area of the shaded part.

(Take $\pi = \frac{22}{7}$)

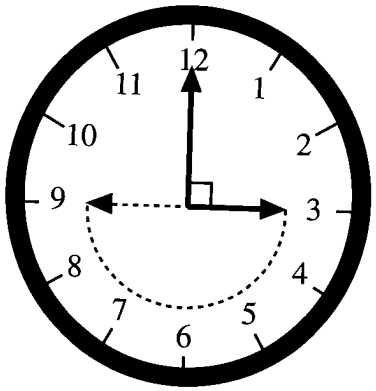


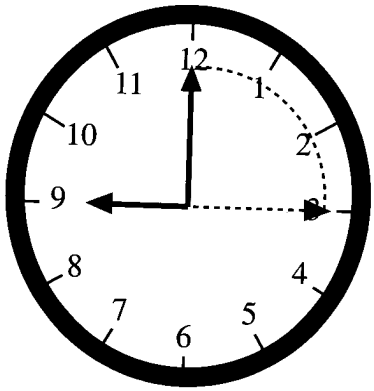
10. The hour hand of a clock is 4 cm long. The minute hand is 6 cm long. Find the distance

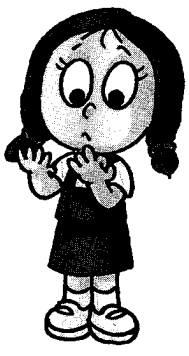
(a) travelled by the tip of the hour hand for 6 hours,

(b) travelled by the tip of the minute hand for 15 minutes.

(Take $\pi = 3.14$)

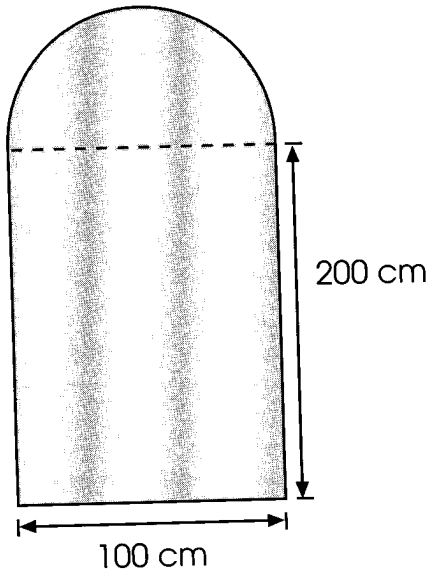






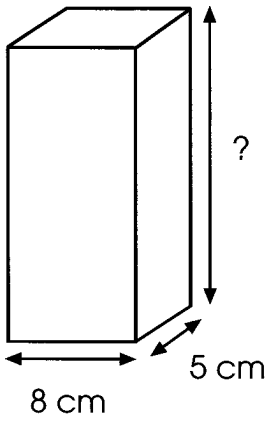
11. A boy rolled a wheel of radius 25 cm on the ground. Find the distance travelled in metre when the wheel had rolled 10 times. (Take $\pi = 3.14$)

12. The shape of a door is made up of a semicircle and a rectangle as shown below. Find the perimeter of the door. (Take $\pi = 3.14$)



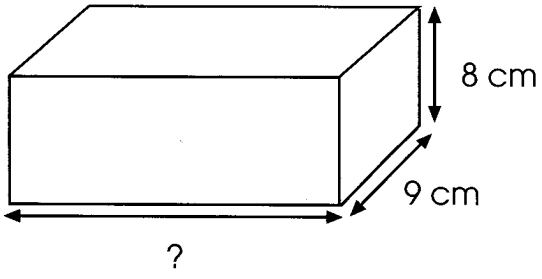
13. Find the length of the unknown side of each of the following cuboids.

(a)



Volume = 640 cm^3

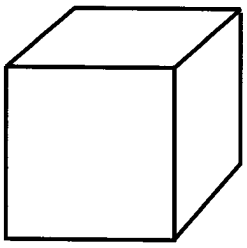
(b)



Volume = 2160 cm^3

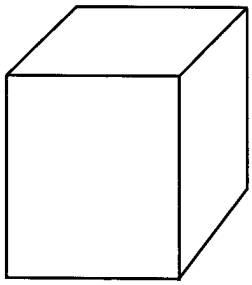
14. Find the length of one side of each of the following cubes.

(a)



Volume = 27 cm^3

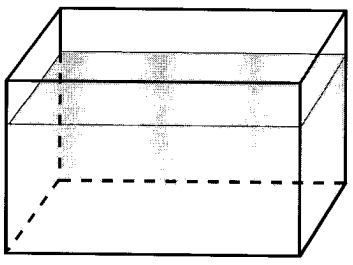
(b)



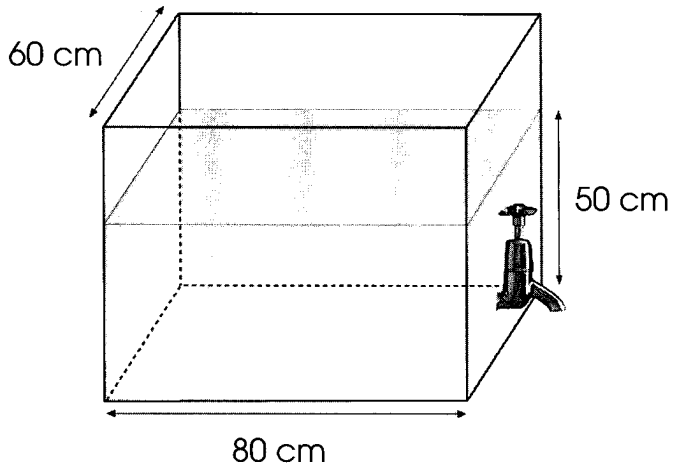
Volume = 729 cm^3

15. A cuboid of length 8 cm and breadth 4 cm has the same volume as a cube of sides 4 cm. Find the height of the cuboid.

16. A rectangular tank contains 36 ℓ of water and the height of the water level is 15 cm. When the height of water level increases to 20 cm, how many litres of water are there in the tank?



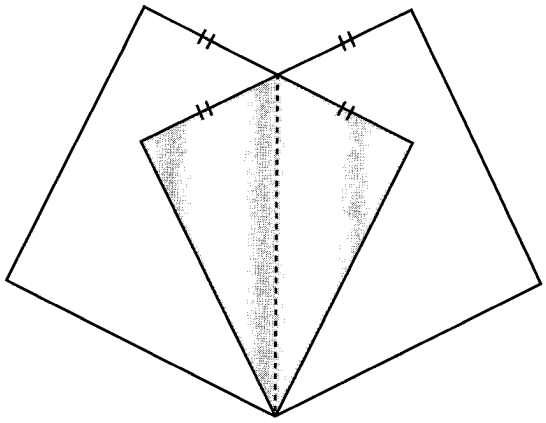
17. A rectangular container of length 80 cm and breadth 60 cm contained some water. The height of the water level was 50 cm. The water from the container was being drained off at a rate of 10 ℓ per minute. How many minutes did it take to drain off half of the amount of water in the container?



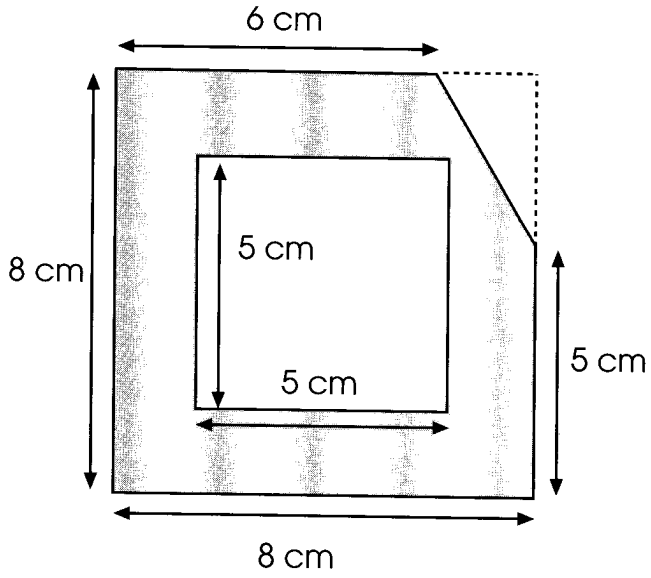
Revision 3B

Date:

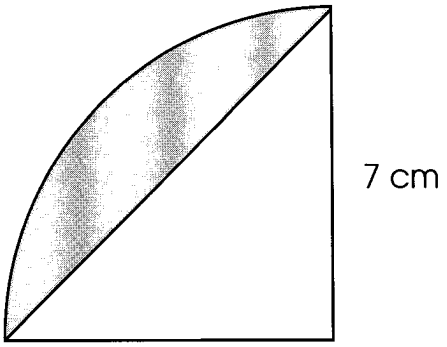
1. The figure shows 2 equal overlapping squares of sides 20 cm. Find the area of the shaded part.



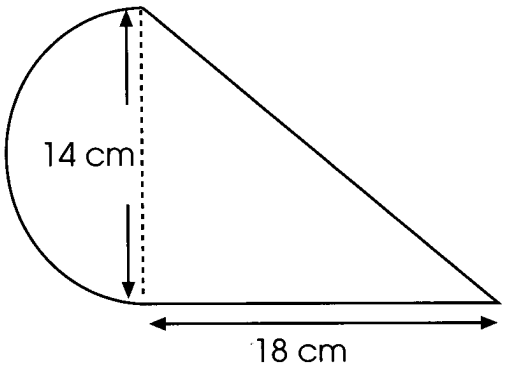
2. The figure shows that a smaller square and a triangle are cut out from a bigger square. Find the area of the remaining part.



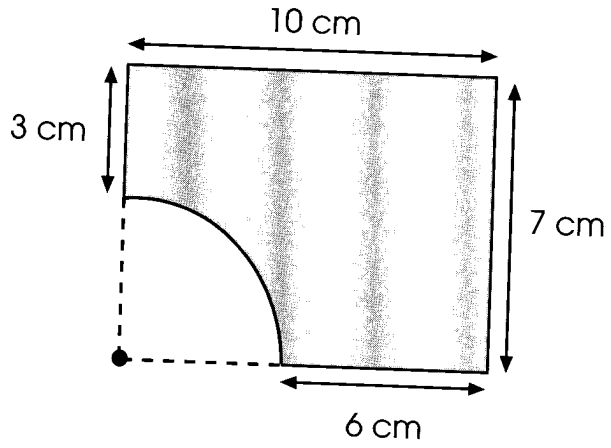
3. The radius of the quadrant is 7 cm. Taking $\pi = \frac{22}{7}$, find the shaded area of the quadrant.



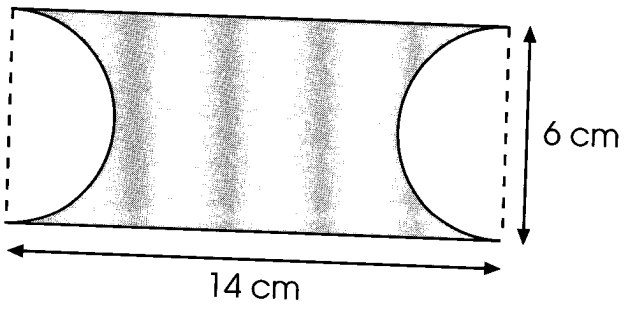
4. The figure is made up of a semicircle and a right- angled triangle. Find the area of the figure. (Take $\pi = \frac{22}{7}$)



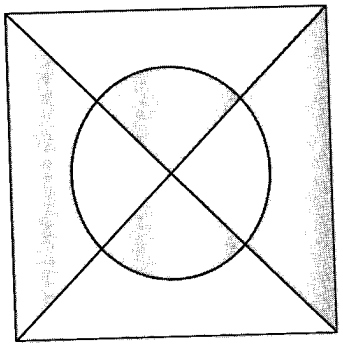
5. The figure shows that a quadrant is cut out from a rectangle. Find the perimeter of the figure. (Take $\pi = 3.14$)



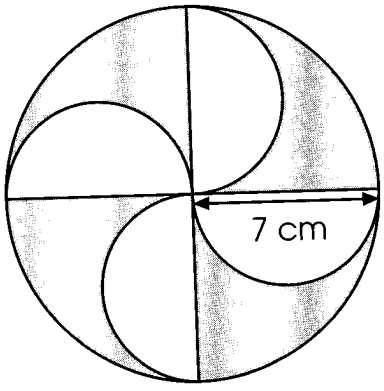
6. The figure shows that two semicircles are cut out from a rectangle. Find the area and perimeter of the figure. (Take $\pi = 3.14$)



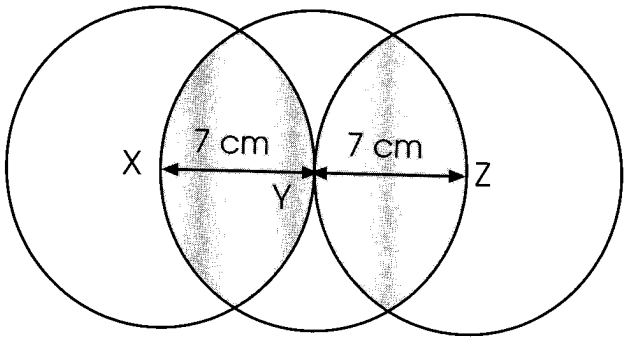
7. A circle is drawn in the centre of a square of side 10 cm as shown in the following diagram. Find the area of the shaded part of the square.



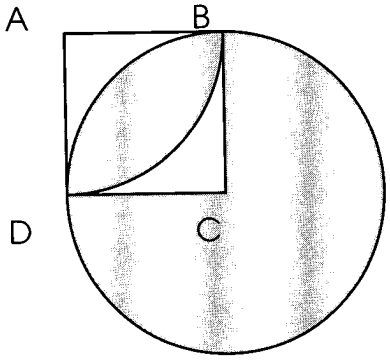
8. 4 equal semicircles were cut off from a circular piece of paper of radius 7 cm as shown in the following diagram. Find the remaining area of the paper. (Take $\pi = \frac{22}{7}$)



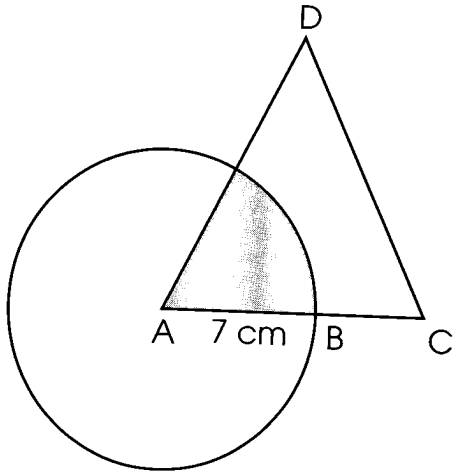
9. The figure shows 3 identical circles intersecting one another. X, Y and Z are the centres of 3 circles and XY = YZ = 7 cm. Each shaded part has an area of 60 cm^2. Find the area of the unshaded part. Give your answer correct to the nearest whole number.



10. In the figure, ABCD is a square of side 15 cm. C is the centre of the circle. A is the centre of the quadrant ABD. Find the total shaded area of the figure. Give your answer correct to the nearest whole number.

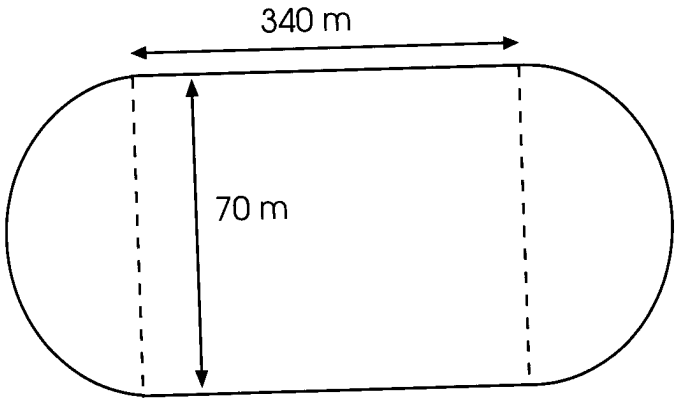


11. In the figure, AB is the radius of the circle of radius 7 cm. The area of the triangle DAC is 94 cm^2. The ratio of the shaded area of the circle to the area of the whole circle is 2 : 11. Find the unshaded area of the triangle DAC. (Take $\pi = \frac{22}{7}$)



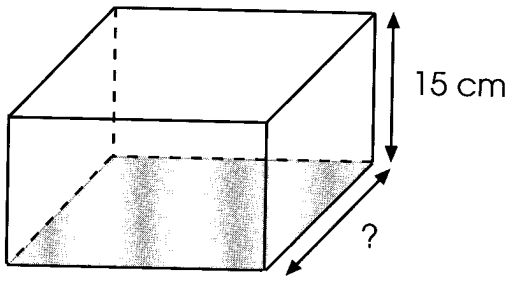
12. A circular wheel of diameter 42 cm makes 100 revolutions per minute. How far will it travel in half an hour? Express your answer in kilometres. (Take $\pi = \frac{22}{7}$)

13. A running track is made up of two straight lines and two semicircles each of diameter 70 m. Tom jogged along the track at an average speed of 30 m/min. How long did Tom take to jog one round along the whole running track? (Take $\pi = \frac{22}{7}$)



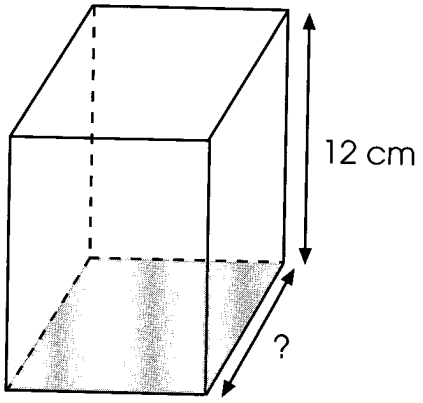
14. Each of the cuboids has a square base. Find the length of one side of the square base. Give your answer correct to the nearest 0.1 cm.

(a)



Volume = 6200 cm^3

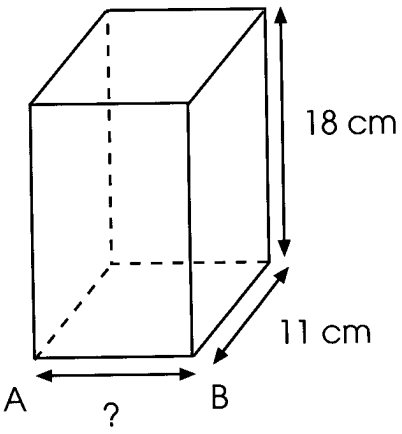
(b)



Volume = 780 cm^3

15. Find the unknown dimension in each cuboid. Give your answer correct to the nearest whole number.

(a)

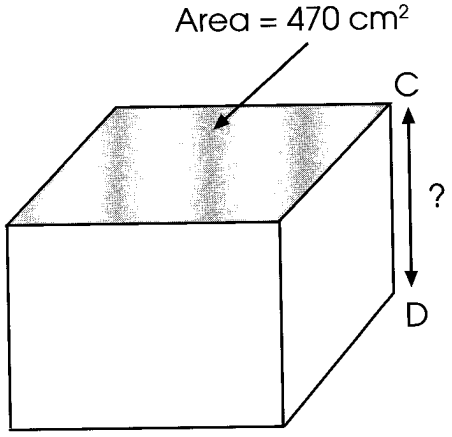


Volume = 2780 cm^3

AB = _____

= _____ cm

(b)

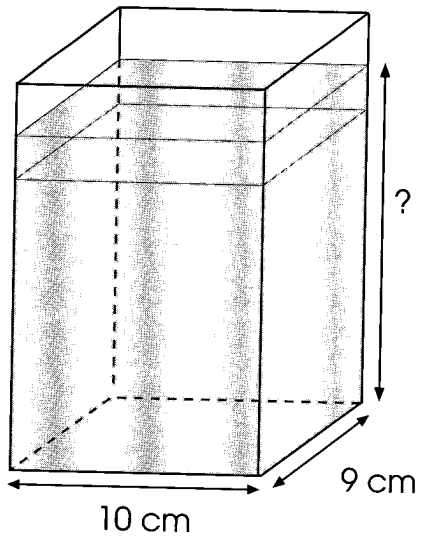


Volume = 7200 cm^3

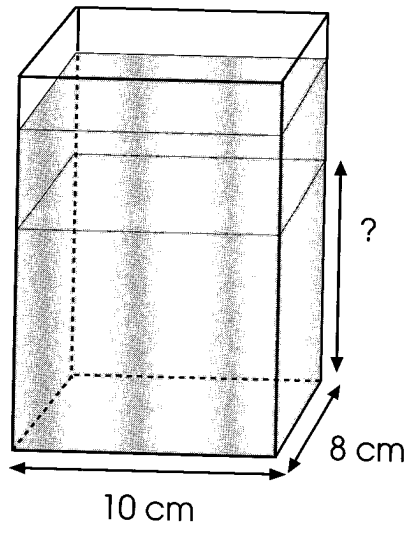
CD = _____

= _____ cm

16. The base of a rectangular container measures 10 cm by 9 cm. It contains 900 cm^3 of water at first. 81 cm^3 more water is poured into the container. What is the new height of the water level in the container?

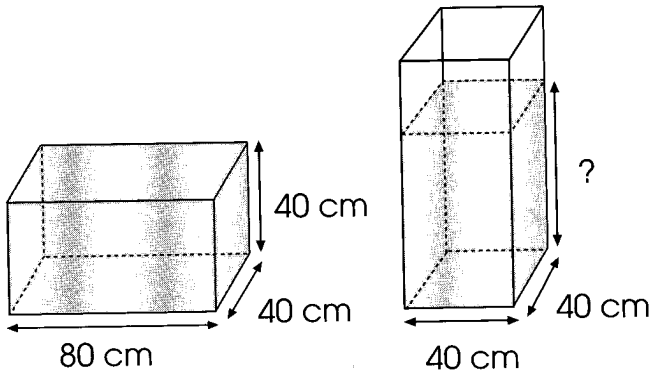


17. There are 1.2 ℓ of water in a rectangular container. Its length is 10 cm and its breadth is 8 cm. If 0.528 ℓ of water is poured out, what will be the height of the water left in the container?

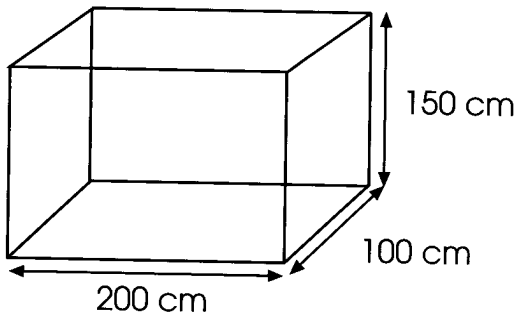


18. Twenty bottles of mineral water each 1.5 ℓ were poured into a rectangular container with a base area of 1200 cm^2. Find the height of the water level in the container.

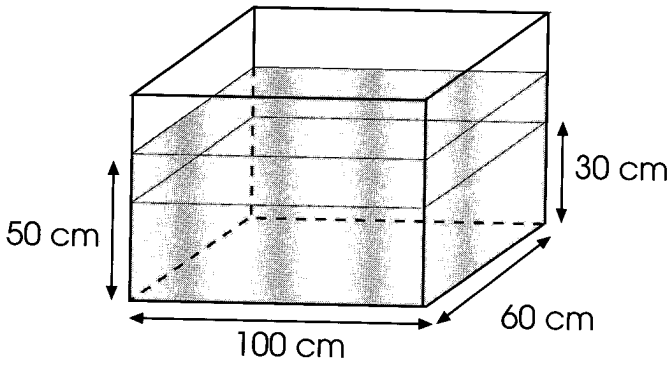
19. A rectangular container measuring 80 cm by 40 cm by 40 cm was filled completely with water. The water was poured into an empty rectangular container with a square base of side 40 cm. Find the height of the water level in the second container.



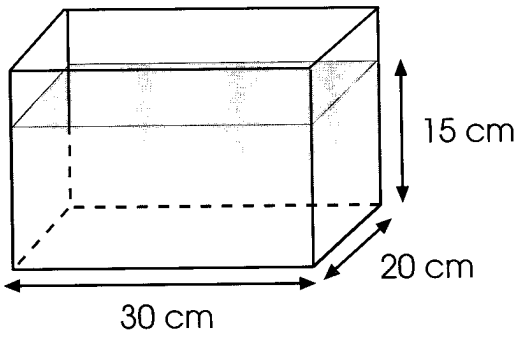
20. An empty water tank of length 200 cm, breadth 100 cm and height 150 cm is being filled with 60 ℓ of water per minute. Find the time (in minutes) needed to fill the tank completely.



21 . A rectangular fish tank of length 100 cm and breadth 60 cm contained water to a height of 30 cm. More water was added to the fish tank so that the height of the water level became 50 cm. Find the amount of water, in litres, that had been added to the fish tank.



22. A rectangular container of length 30 cm and breadth 20 cm was filled with orange juice to a height of 15 cm. Cups of capacity 250 mℓ were used to serve this orange juice. How many cups full of orange juice could be served?



250 ml each