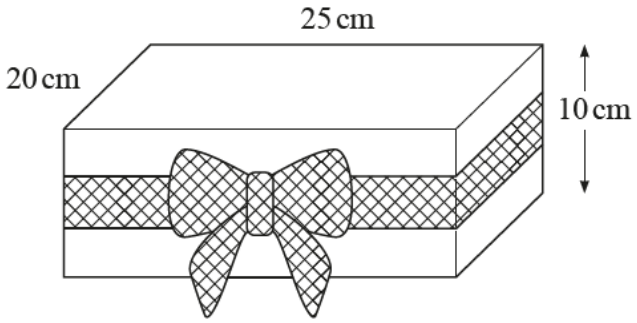
Geometrical Mensuration – 2020 IGCSE 0444

1. Nov/2020/Paper_13/No.13

A gift box has length 25 cm, width 20 cm, and height 10 cm.



NOT TO SCALE

(a) Leanne wraps a piece of ribbon around the sides of the gift box and ties it into a bow. The piece of ribbon is 1.22 meters long.

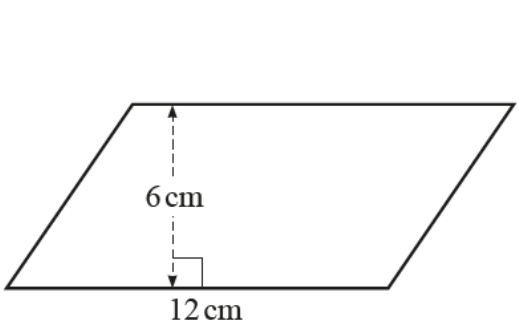
How many centimeters of ribbon does Leanne use to make the bow?

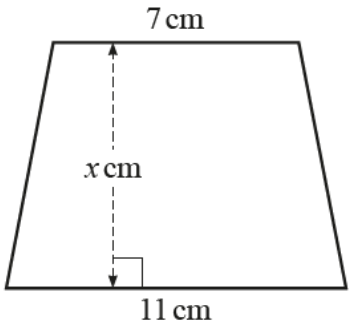
..... cm [3]

(b) Find the volume of the gift box.

..... cm^3 [2]

2. Nov/2020/Paper_13/No.14





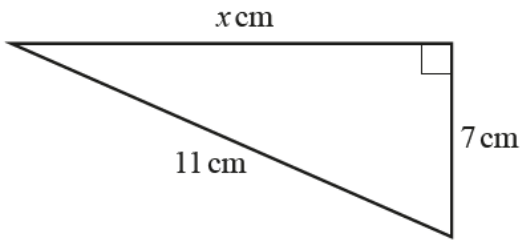
NOT TO SCALE

The area of the parallelogram is the same as the area of the trapezoid.

Work out the value of x.

$x =$ ..... [3]

3. Nov/2020/Paper_13/No.22



NOT TO SCALE

Alisha says that the value of x must be between 8 and 9.

Show that Alisha is correct.

[3]

4. Nov/2020/Paper_23/No.3

In triangle ABC, $BC = 7.6\,\text{cm}$ and $AC = 6.2\,\text{cm}$.

Using a compass and ruler only, construct triangle ABC.
Leave in your construction arcs.
The side AB has been drawn for you.

[2]

5. Nov/2020/Paper_23/No.16

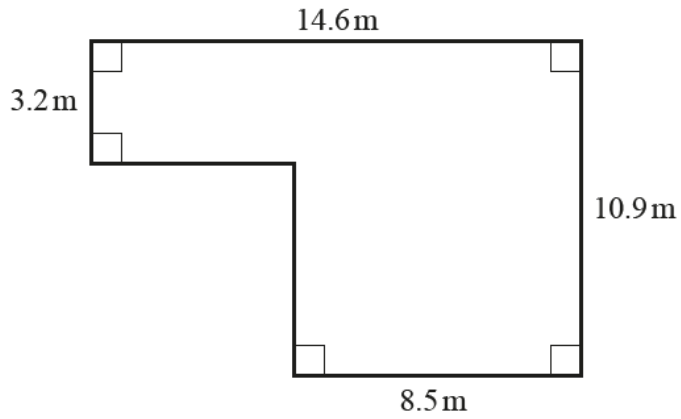
A paperweight has height 3 cm and volume 27 cm^3.
A mathematically similar paperweight has height 4 cm.

Calculate the volume of this paperweight.

..... cm^3 [3]

6. Nov/2020/Paper_33/No.4

(a) The diagram shows the plan of part of Rachel's garden.



NOT TO SCALE

Calculate the area.

..... m^2 [3]

(b) Rachel has a pond in her garden in the shape of a circle.
The circumference of the pond is 4.25 m.

Calculate the diameter of the pond.
Give your answer in centimeters.

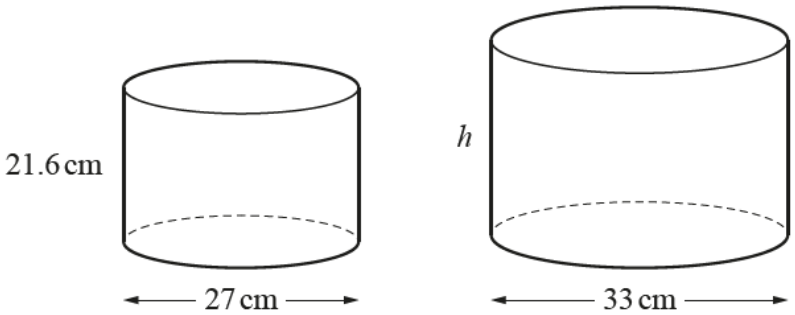
..... cm [3]

(c) A plant pot is a cylinder with radius 15 cm and height 24 cm.

Calculate the volume of the pot.

..... cm^3 [2]

(d) The diagram shows two mathematically similar plant pots.



NOT TO SCALE

The smaller pot has height 21.6 cm and diameter 27 cm.
The larger pot has diameter 33 cm.

Find the height, h, of the larger pot.

$h =$ ..... cm [2]

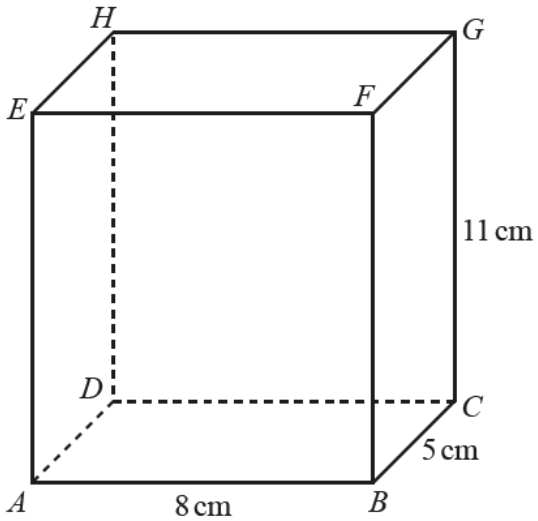
(e) A shop sells bags of compost in three different sizes.

Small	Medium	Large
30 liters $5.82	50 liters $9.45	75 liters $14.50

Work out which size of bag gives the best value.
Show how you decide.

..... [3]

7. Nov/2020/Paper_43/No.7



NOT TO SCALE

ABCDEFGH is a closed hollow cuboid.
$AB = 8$ cm, $BC = 5$ cm and $CG = 11$ cm.

(a) (i) Work out the total surface area of the cuboid.

..... cm^2 [2]

(ii) The cuboid is made from thin metal and 1 cm^2 of this metal has a mass of 0.73 grams.

Work out the mass of the cuboid.

..... g [1]

(b) Ivana has a rod of length 13 cm.

(i) The total mass of this rod and the cuboid is 0.3 kg.

Find the mass of the rod, giving your answer in grams.

..... g [2]

(ii) Show that the rod fits completely inside the cuboid.

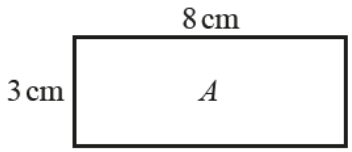
[4]

(c) Calculate angle *CAB*.

Angle *CAB* = ... [2]

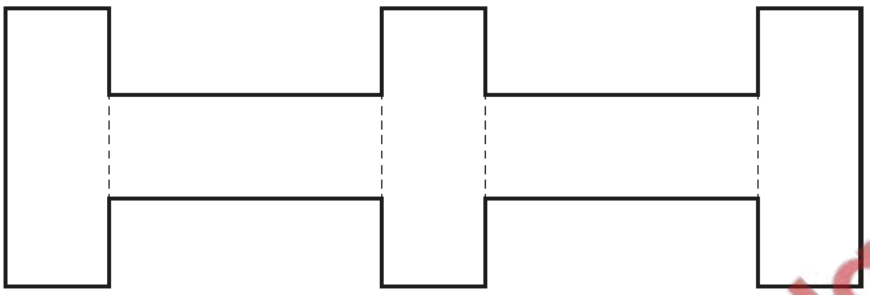
8. June/2020/Paper_11/No.8

Rectangle A measures 3 cm by 8 cm.



NOT TO SCALE

Five rectangles congruent to A are joined to make a shape.



NOT TO SCALE

Work out the perimeter of this shape.

..... cm [2]

9. June/2020/Paper_11/No.13

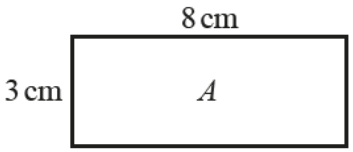
A sphere has radius 5 cm.

Work out the surface area of the sphere.
Give your answer in terms of π.

..... cm^2 [2]

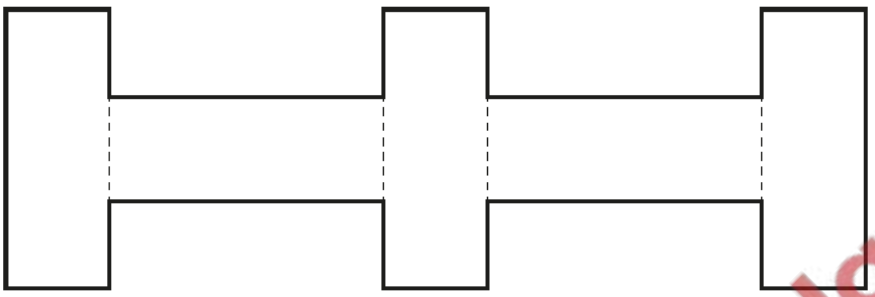
10. June/2020/Paper_21/No.1

Rectangle A measures 3 cm by 8 cm.



NOT TO SCALE

Five rectangles congruent to A are joined to make a shape.

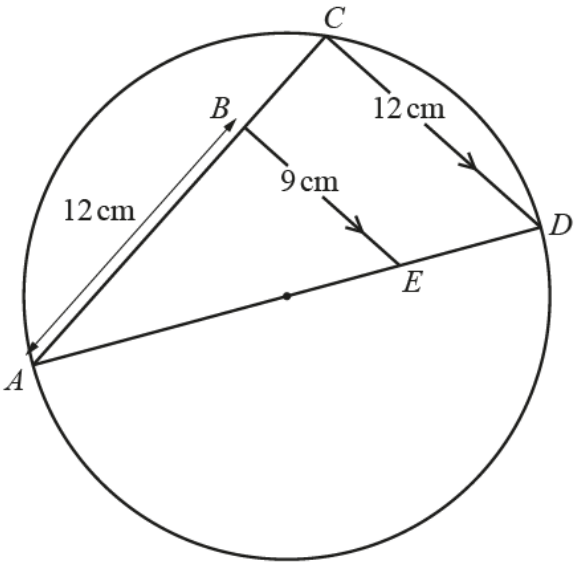


NOT TO SCALE

Work out the perimeter of this shape.

..... cm [2]

11. June/2020/Paper_21/No.13



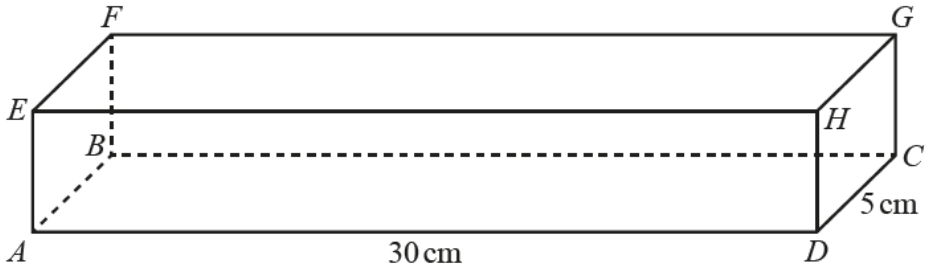
NOT TO SCALE

C lies on a circle with diameter AD.
B lies on AC and E lies on AD such that BE is parallel to CD.
$AB = 12$ cm, $CD = 12$ cm and $BE = 9$ cm.

Work out the radius of the circle.

..... cm [5]

12. June/2020/Paper_21/No.19



NOT TO SCALE

The diagram shows a solid cuboid *ABCDEFGH* of length 30 cm and width 5 cm.
The volume of the cuboid is 600 cm^3.

Find the total surface area of the cuboid.

..... cm^2 [4]

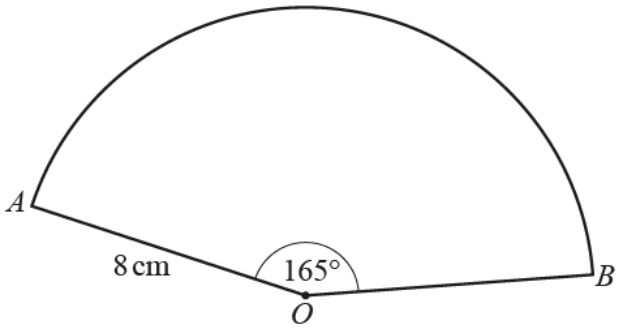
13. June/2020/Paper_21/No.21

The area of a regular hexagon with side length 8 cm is $k\sqrt{3}\,\text{cm}^2$.

Find the value of k.

$k =$ ..... [3]

14. June/2020/Paper_41/No.7



NOT TO SCALE

The diagram shows a sector of a circle with center O, radius 8 cm and sector angle 165°.

(a) Calculate the total perimeter of the sector.

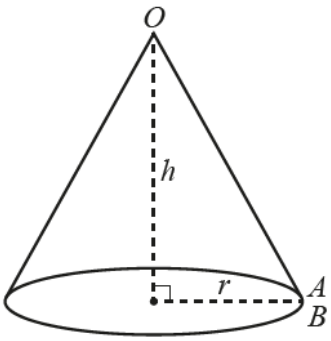
..... cm [3]

(b) The surface area of a sphere is the same as the area of the sector.

Calculate the radius of the sphere.

..... cm [4]

(c)



NOT TO SCALE

A cone is made from the sector by joining OA to OB.

(i) Calculate the radius, r, of the cone.

$r =$ ..... cm [2]

(ii) Calculate the volume of the cone.

..... cm^3 [4]