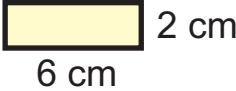
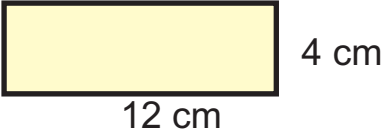


## Year 9 - Worksheet 29


If a figure is enlarged by scale factor  $k$ , then the area of the figure is enlarged by the factor  $k^2$ . To demonstrate this, complete the areas of the rectangles below.

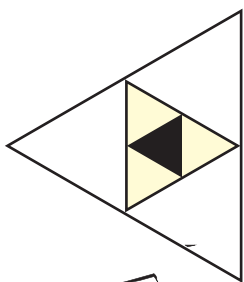
1.  Scale Factor = 1  
Area = \_\_\_\_\_



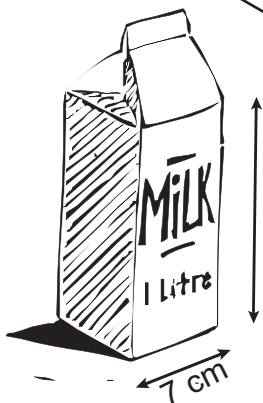
2.  Scale Factor = 2  
Area = \_\_\_\_\_  
i.e.  $2^2 \times 12\text{cm}^2 =$  \_\_\_\_\_



3.  Scale Factor = 3,  
Area = \_\_\_\_\_  
i.e.  $3^2 \times 12\text{cm}^2 =$  \_\_\_\_\_



4. This diagram is made up of equilateral triangles. The smallest (black) triangle has an area of  $10\text{m}^2$ . What is the area of the largest triangle?  
\_\_\_\_\_

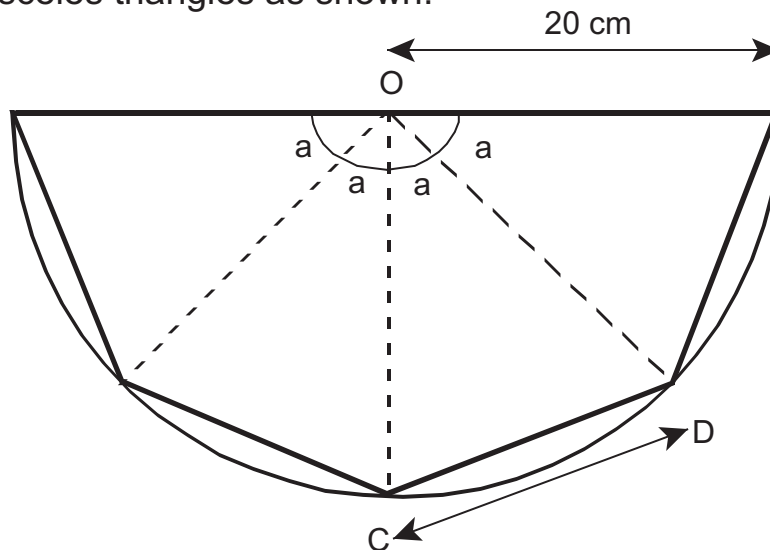


5. The milk carton shown holds 1 litre of milk. What is the height of the carton if it has a  $7\text{cm} \times 7\text{cm}$  square base?  
Height = \_\_\_\_\_
6. What will the height of the carton be if the base is the same dimensions but the carton holds 300 ml?  
\_\_\_\_\_

## PYRAMIDS

Below are the steps to make a pyramid with a square base. Complete each of the steps and answer the questions.

- On a piece of cardboard, draw a semicircle, centre O, radius 10 cm and make 4 isosceles triangles as shown.



- Calculate the measurements of the following:

The lengths OD and OC.

\_\_\_\_\_

The length CD.

\_\_\_\_\_

The angles labeled a.

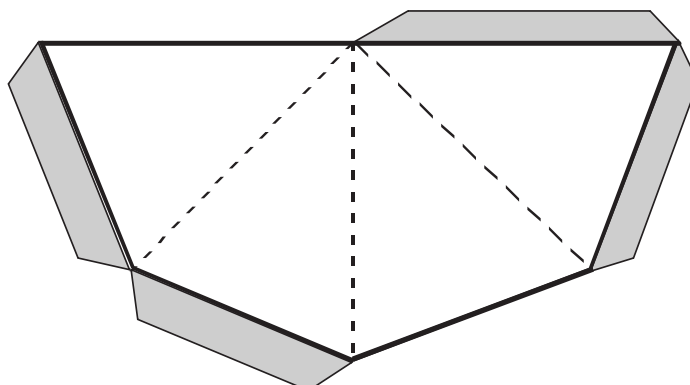
\_\_\_\_\_

- What is the name of the triangle formed by OCD?

\_\_\_\_\_

- To complete the pyramid, you will have to add a base.  
What will be the shape and what will be the measurements of the base?

\_\_\_\_\_



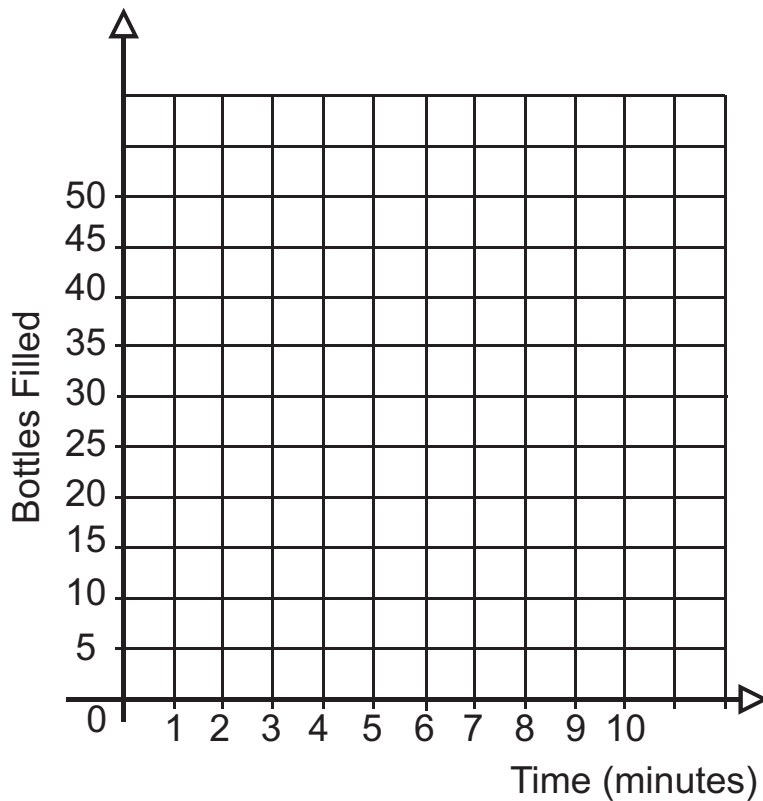
- Add the base and tabs, score all the lines and fold to make a pyramid.

## GRAPHS

At the Mahobe Orange Juice Factory, bottles of fresh orange juice are produced for despatch to supermarkets. The bottling machine is able to fill and seal five, 2 litre bottles of juice every minute.

- Complete the table below, then use the co-ordinates to construct a line graph of the production.

Time	Bottles Filled	Co-ordinates
0	0	(0, 0)
1	5	(1, 5)
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____



- How long does it take to fill 50 bottles?

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