

UNIT 7 *Mensuration*

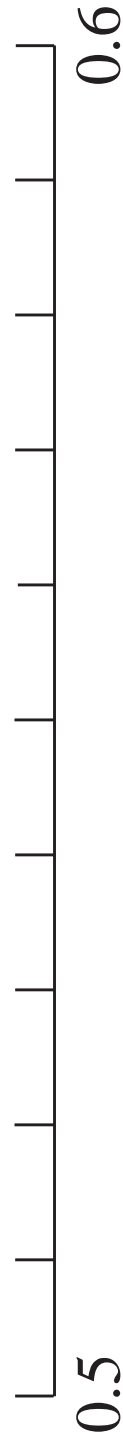
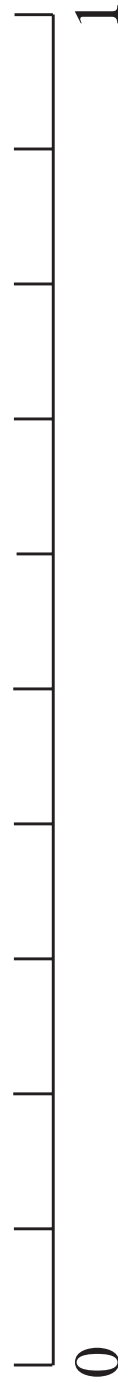
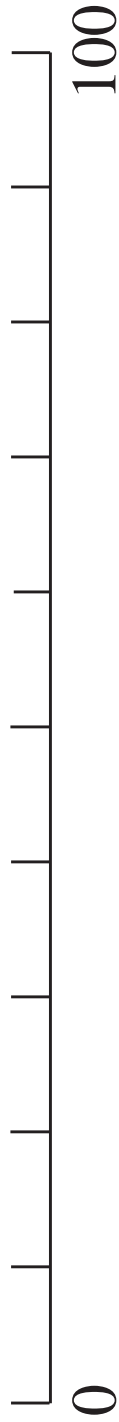
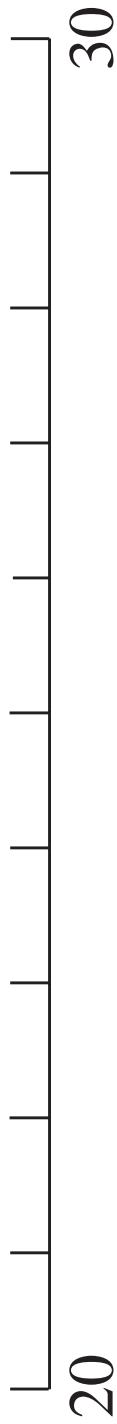
Overhead Slides

Overhead Slides

- 7.1 Number Scales
- 7.2 Area
- 7.3 Imperial Units
- 7.4 Conversion Facts
- 7.5 Areas of Rectangles
- 7.6 Areas of Triangles
- 7.7 Areas of Parallelograms
- 7.8 Equal Perimeters
- 7.9 Equal Areas
- 7.10 Volumes
- 7.11 Areas
- 7.12 More Volumes

OS 7.1

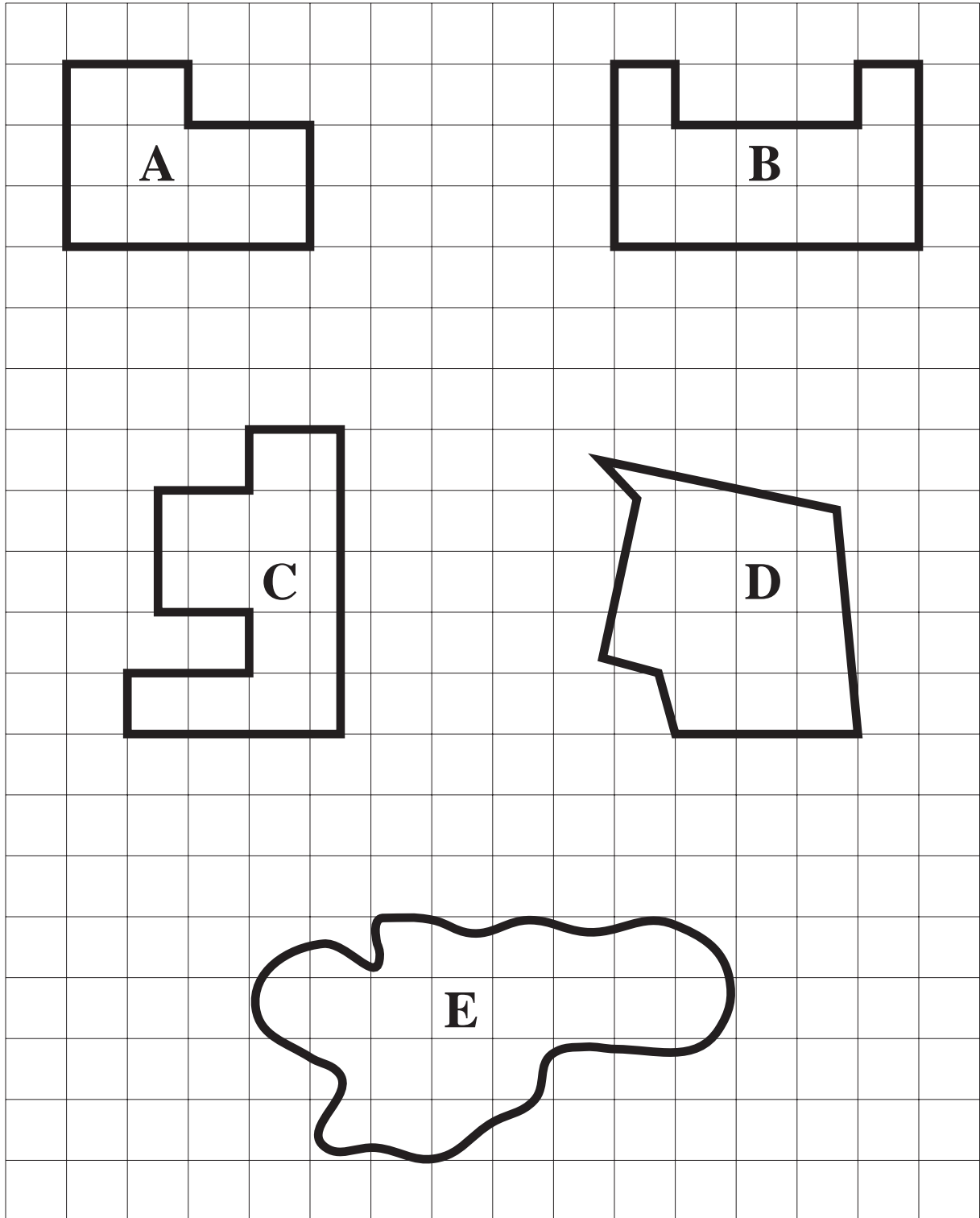
Number Scales



OS 7.2

Area

Count or estimate the number of 1 cm squares in each figure below, and give the area of each figure.



OS 7.3*Imperial Units*

Imperial Units

1 foot = 12 inches

1 yard = 3 feet

1 pound (lb) = 16 ounces

1 stone = 14 pounds

1 gallon = 8 pints

OS 7.4*Conversion Facts*

Conversion Facts

1 kg is about 2.2 lbs

1 gallon is about 4.5 litres

1 litre is about 1.75 pints

5 miles is about 8 km




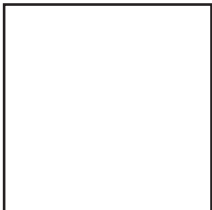
1 inch is about 2.5 cm

1 foot is about 30 cm

OS 7.5

Areas of Rectangles

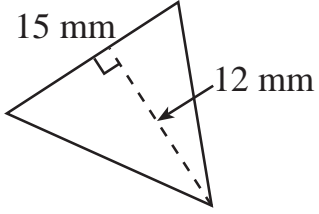
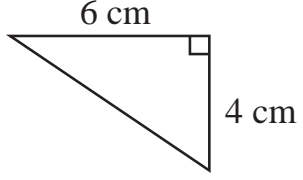
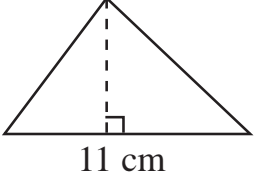
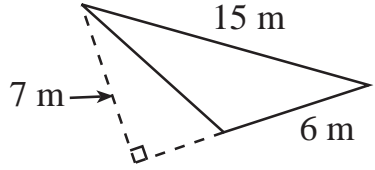
Complete the table. Diagrams are not drawn to scale.

<i>Rectangle</i>	<i>Length</i>	<i>Width</i>	<i>Area</i>
 3 cm	6 cm		
 5 cm			15 cm ²
 12 cm		1 cm	
 6 cm			36 cm ²

OS 7.6

Areas of Triangles

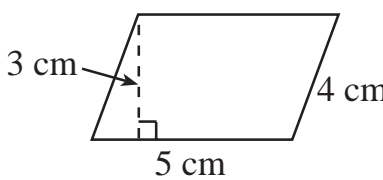
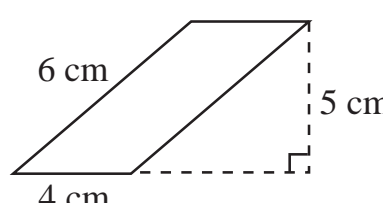
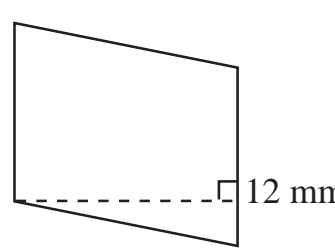
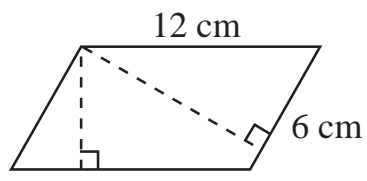
Complete the table. Diagrams are not drawn to scale.

<i>Triangle</i>	<i>Base</i>	<i>Height</i>	<i>Area</i>
	15 mm		
			
			22 cm ²
	6 m		

OS 7.7

Areas of Parallelograms

Study the following parallelograms and complete the table. Diagrams are not drawn to scale.

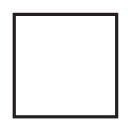

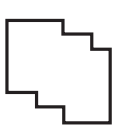
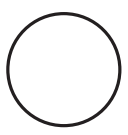

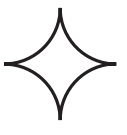

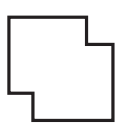



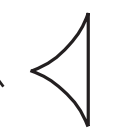
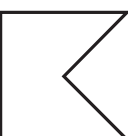

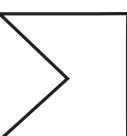

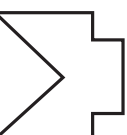

<i>Parallelogram</i>	<i>Base</i>	<i>Height</i>	<i>Area</i>
	5 cm		
		5 cm	
	12 mm		144 mm ²
	12 cm		48 cm ²
	6 cm		

OS 7.8

Equal Perimeters

From each figure in the middle column, draw a line to a figure in column A, and one in column B, that have the same perimeter length.

An example is shown for you.

<i>Column A</i>	<i>Middle Column</i>	<i>Column B</i>
		
		
		
		
		
		

Note: Two lines are drawn from the Middle Column to Column B. One line connects the quarter circle in the second row of the Middle Column to the star-like shape with concave sides in the second row of Column B. Another line connects the square with a quarter circle on the right side in the fourth row of the Middle Column to the star-like shape with convex sides in the third row of Column B.

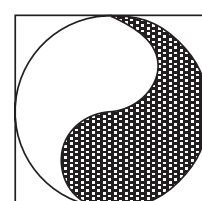
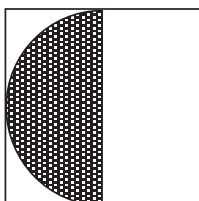
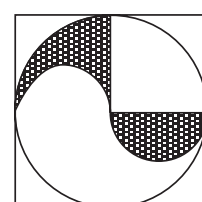
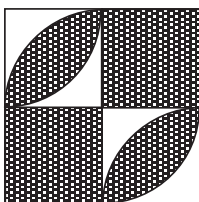
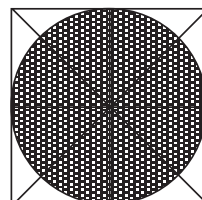
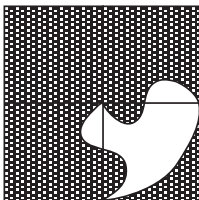
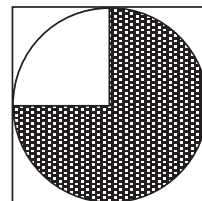
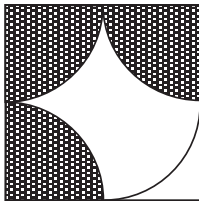
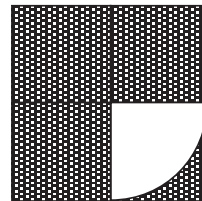
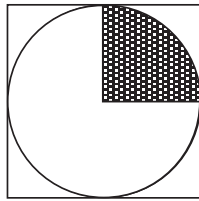
OS 7.9

Equal Areas

Draw a line connecting a figure in column A to another in column B which has the same area shaded.

Column A

Column B



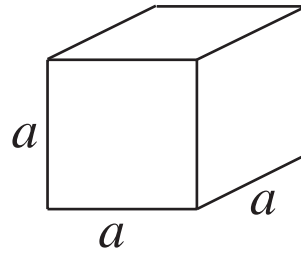
OS 7.10

Volumes

The formulae for calculating the areas of these shapes are:

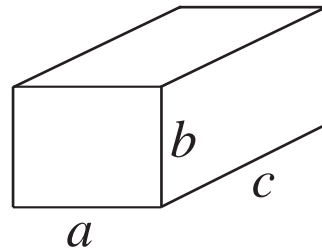
Cube

$$V = a^3$$



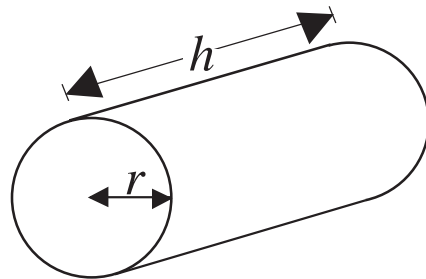
Cuboid

$$V = a b c$$



Cylinder

$$V = \pi r^2 h$$



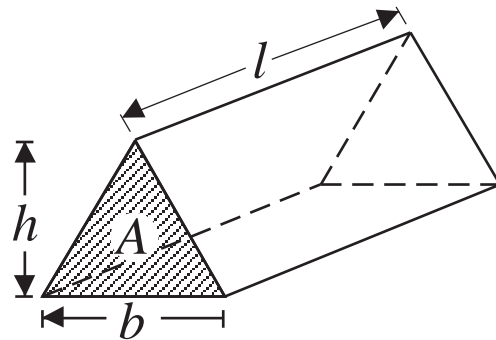
Triangular prism

Either

$$V = A l$$

or

$$V = \frac{1}{2} b h l$$

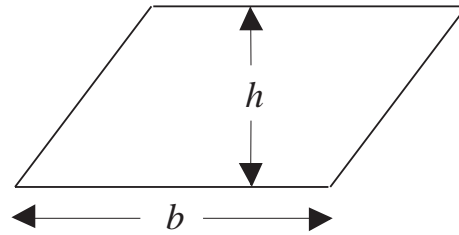


OS 7.11*Areas*

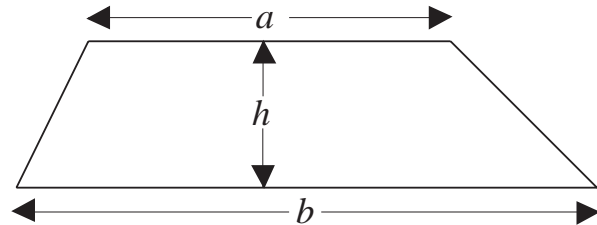
The formulae for calculating the areas of these shapes are:

Parallelogram

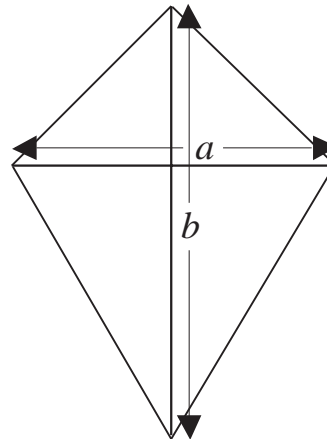
$$A = bh$$

***Trapezium***

$$A = \frac{1}{2}(a + b)h$$

***Kite***

$$A = \frac{1}{2}ab$$

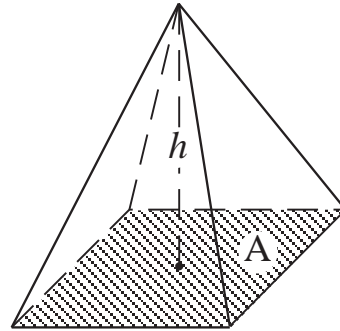


OS 7.12*More Volumes*

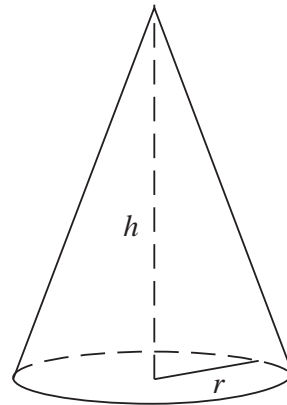
The volumes of a pyramid, a cone and a sphere are found using the following formulae.

Pyramid

$$V = \frac{1}{3} A h$$

***Cone***

$$V = \frac{1}{3} \pi r^2 h$$

***Sphere***

$$V = \frac{4}{3} \pi r^3$$

