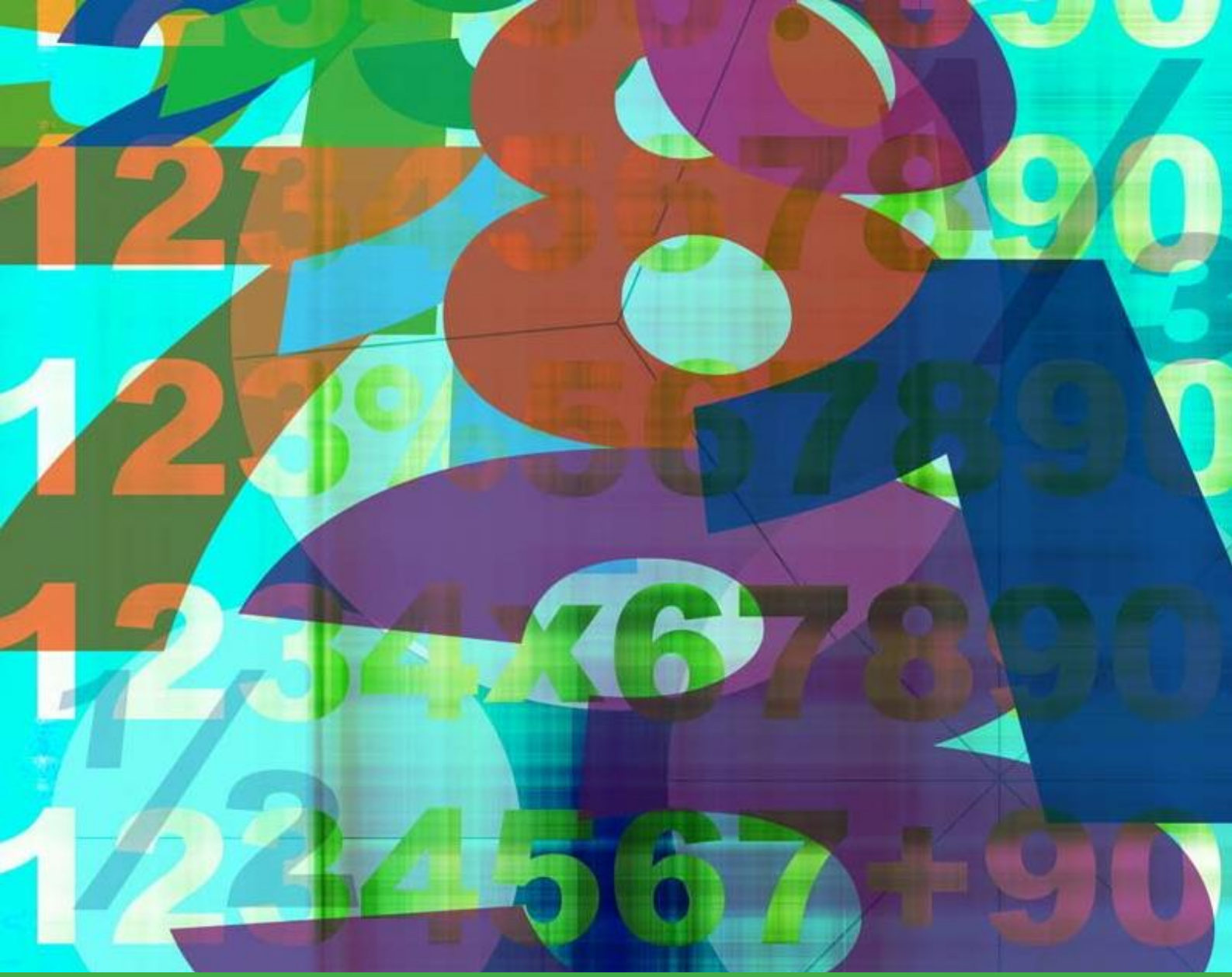


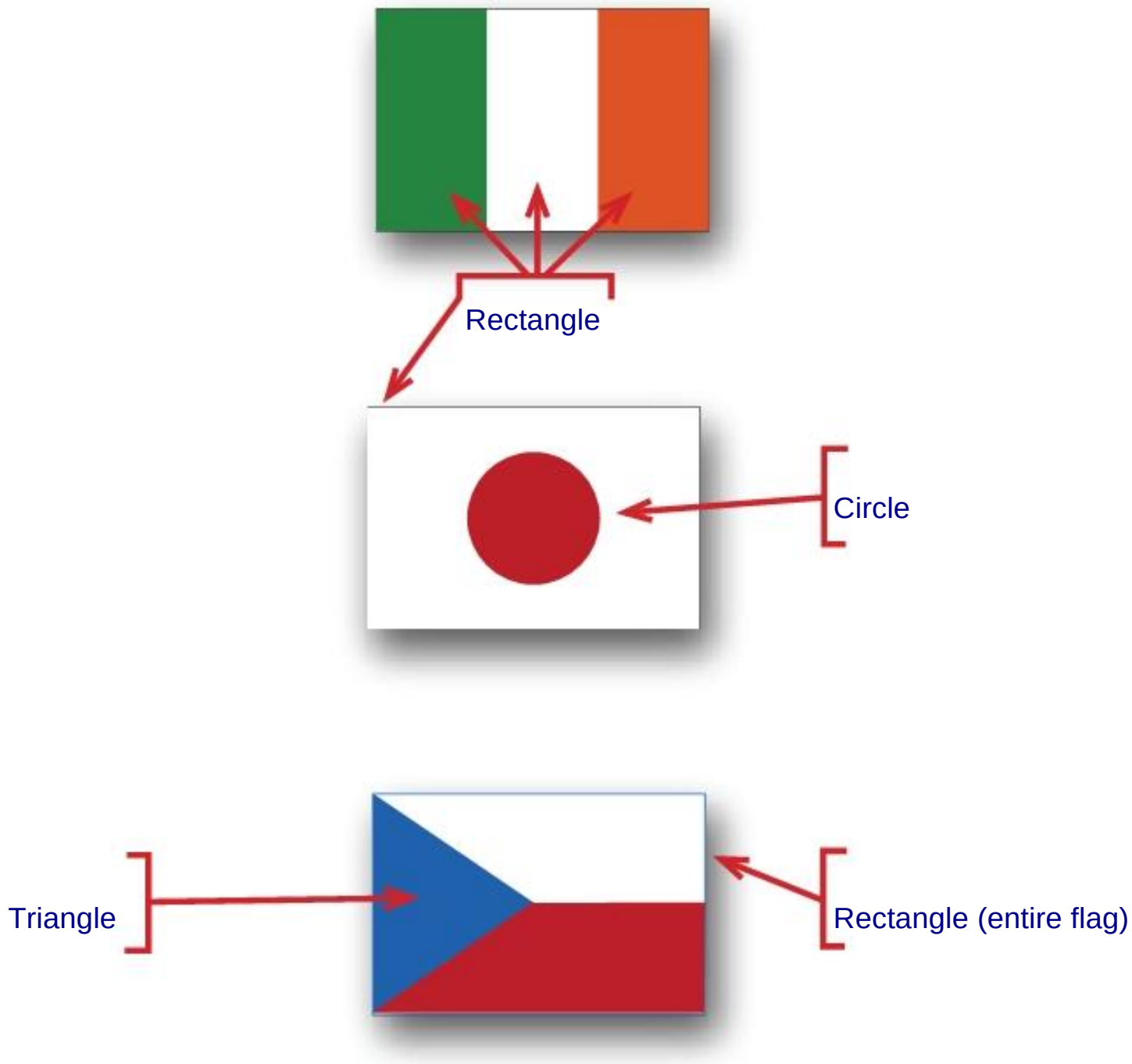
Level 3 Application of Number - Unit 2

Answers to tasks in the Learner Pack

Unit 2: Measurement and Capacity

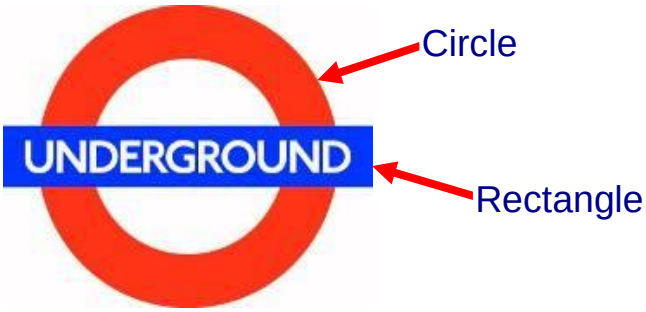
Answers M1

- Find the basic shapes contained in eachof these flags.



Answers M2

Task 1



Task 2

Answers M3

The tutor will check that the flags and logos are drawn to the the given dimensions.

Answers M4

Task 1: New grass surface for soccer pitch

1. What is the area of the pitch?
Answer: 7,700 m^2

To work it out remember that **Area = Length x Width**. So, to get the area of the pitch we must multiply the length by the width. That is, 110m x 70m.

110m x 70m = 7,700 m^2. So the area of the pitch is 7,700 m^2

2. How much it would cost to buy a new grass surface for the pitch?
A new grass surface costs €5 per square metre.
Answer: €38,500

The staff need 7,700 m^2 of grass surface.

Each m^2 costs €5.

So the cost of 7,700 m^2 is 7,700 x 5 = €38,500.

Task 2: New grass surface for soccer pitch (2)

The new area of the pitch is 75 m x 110 m = 8250 m^2

It would cost € 5 per square metre so 8250 m^2 x € 5 = € 41,250

;

Answers M5 Creating models of furniture (1)

Task 1 : Draw a couch and find its area

Answer is in the learner pack

Task 2 : Drawing a two-dimensional models of furniture

Couch :	Length: 18 cm	Width: 8 cm	Area = 144 cm^2
Shelving unit :	Length: 10cm	Width: 6 cm	Area = 60 cm^2
Chair :	Length: 9 cm	Width: 9 cm	Area = 81 cm^2
Table:	Length: 12 cm	Width: 5 cm	Area = 60 cm^2
TV set:	Length: 7 cm	Width: 5 cm	Area = 35 cm^2

Task 3 : Know your lines

1. Perpendicular
2. Parallel
3. Neither
4. Neither

Task 4 : Know your angles

Aswers will vary according to selected activities

Task 5 : Bisecting an angle

The tutor will check this task.

Task 6: Finding the area of a triangle

1. 5 m^2
2. 6 m^2

Task 7: Triangles and Furniture

The answer is in the pack.

Answers M6: Investigating Pi

Task 1: Measuring circles and finding Pi

Answers will vary according to the objects selected

Task 2: Two dimensional drawing of a circular coffee table

In this drawing of a coffee table, the radius is 5cm. So, using the formula, we know that the area equals 3.14 multiplied by 5^2.

Area = 3.14 x 5^2

Area = 3.14 x 25

Area of coffee table = 78.5 cm^2

Task 3: Calculating area

Coffee Table -	Radius: 5 cm		Area = 78.5 cm^2
Couch -	Length: 18 cm	Width: 8 cm	Area = 144 cm^2
Shelving unit -	Length: 10cm	Width: 6 cm	Area = 60 cm^2
Chair -	Length: 9 cm	Width: 9 cm	Area = 81 cm^2
Table -	Length: 12 cm	Width: 5 cm	Area = 60 cm^2
TV set -	Length: 7 cm	Width: 5 cm	Area = 35 cm^2
Rug -	Radius: 6 cm		Area = 113.04 cm^2

Answers M7: Creating models of furniture (2)

Task 1: Find the area of a chair

9cm x 9 cm = 81 cm^2

Task 2:

Coffee Table:	Radius: 5 cm		Area = 78.5 cm^2
Couch:	Length: 18 cm	Width: 8 cm	Area = 144 cm^2
Shelving unit:	Length: 10cm	Width: 6 cm	Area = 60 cm^2
Chair:	Length: 9 cm	Width: 9 cm	Area = 81 cm^2
Table:	Length: 12 cm	Width: 5 cm	Area = 60 cm^2
TV set:	Length: 7 cm	Width:5cm	Area = 35 cm^2
Rug:	Radius: 6 cm		Area = 113.04 cm^2

Answers M8:Calculating area

Task 1:

1. The area of the bedroom is 40 m^2
2. €280

Task 2:

For your **room model** cut out a rectangular area with length 40cm and width 30cm.

Calculate the area.

Area = 40 x 30 = **1,200 cm^2**

Answers M9:Calculating actual distance

Task 1: Example of scale

(a) Measured length is 3cm. Actual length = 3 x 100 = 300 km

(b) Measured length is 2cm. Actual length = 2 x 100 = 200 km

(c) Measured length is 2cm. Actual length = 2 x 100 = 200 km

Task 2: Finding distance on a map

(a) The distance on the map between Rome and Naples is 2cm. 1cm represents 100 kilometres.

2 x 100 = **200 kilometres.** So 200 kilometres is the real-life distance.

(b) The distance on the map between Milan and Bologna is 1.8 cm. To find the actual distance, multiply 1.8 by 100

1.8 x 100 = **180 kilometres**

(c) The distance between Livorno and Florence is 0.8 cm
To find the actual distance, multiply 0.8 by 100

0.8 x 100 = **80 kilometres**

Answers M10: Calculating volume

Task 1: Boilers

The answer is in the pack

Task 2: Volume of a cylinder

The plumber decides to get the next biggest boiler. This has a radius of 40cm and the max height of the water is 60cm. What is the maximum volume of water that can be in the boiler at any given time?

Volume (v) = $\pi r^2 h$

Volume (v) = $3.14 \times (40)^2 \times 60$

Volume = $3.14 \times 1600 \times 60$

Volume = $5{,}024 \times 40$

Volume = 200,960 cm^3

The maximum amount of water that can be stored in the boiler is 200,960 cm^3, which is 200,960 ml or 200.96 Litres

Note: 1 cm^3 = 1 ml 1,000 ml = 1 Litre