

Learning for Life.

# Measurement

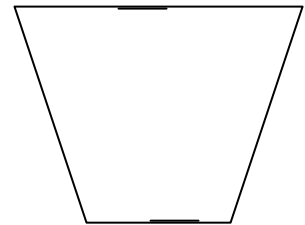
m54w4

Substrand: Direct Measurement

In the space provided write a convincing explanation of how you solved the problem. Remember to show clearly all the mathematics used. The answer alone is not enough!

## Area of Trapeziums

Pictured to the right is a **trapezium**. This is another four-sided **polygon** or quadrilateral. Unlike a rectangle it doesn't necessarily have  $90^\circ$  corners. It has two parallel sides (as indicated by the diagram with arrows).



To find the area of a parallelogram.

### Step 1

Find the lengths of the parallel sides and average them. (Add them up and divide by two.)

### Step 2

Multiply this average by the perpendicular height.

### Step 3

Write your answer including the correct unit of measurements.

eg

Step 1

The parallel sides are AB and CD. By measuring them they are 4.5 cm and 2.5 cm respectively.

$$4.5 + 2.5 = 7$$

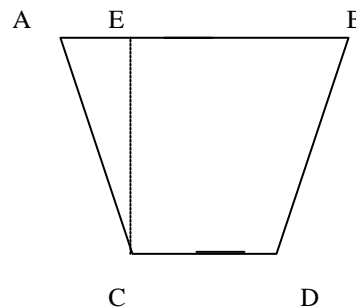
$$7 \div 2 = 3.5$$

Step 2

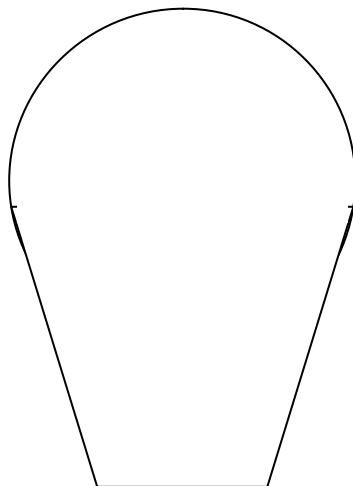
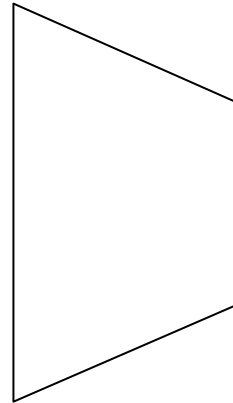
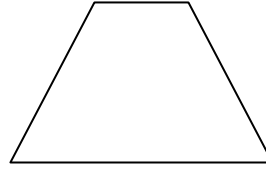
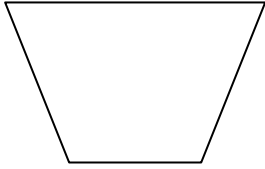
Multiply the average by the perpendicular height.

$$3.5 \text{ (height)} \times 3.5 \text{ (average length)}$$

$$= 12.25 \text{ cm}^2$$



Find the area of each of the following. Make your measurements accurate to the nearest millimetre.



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**Reflection:**

- Write down some of the difficulties that you had to overcome to solve this problem.
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