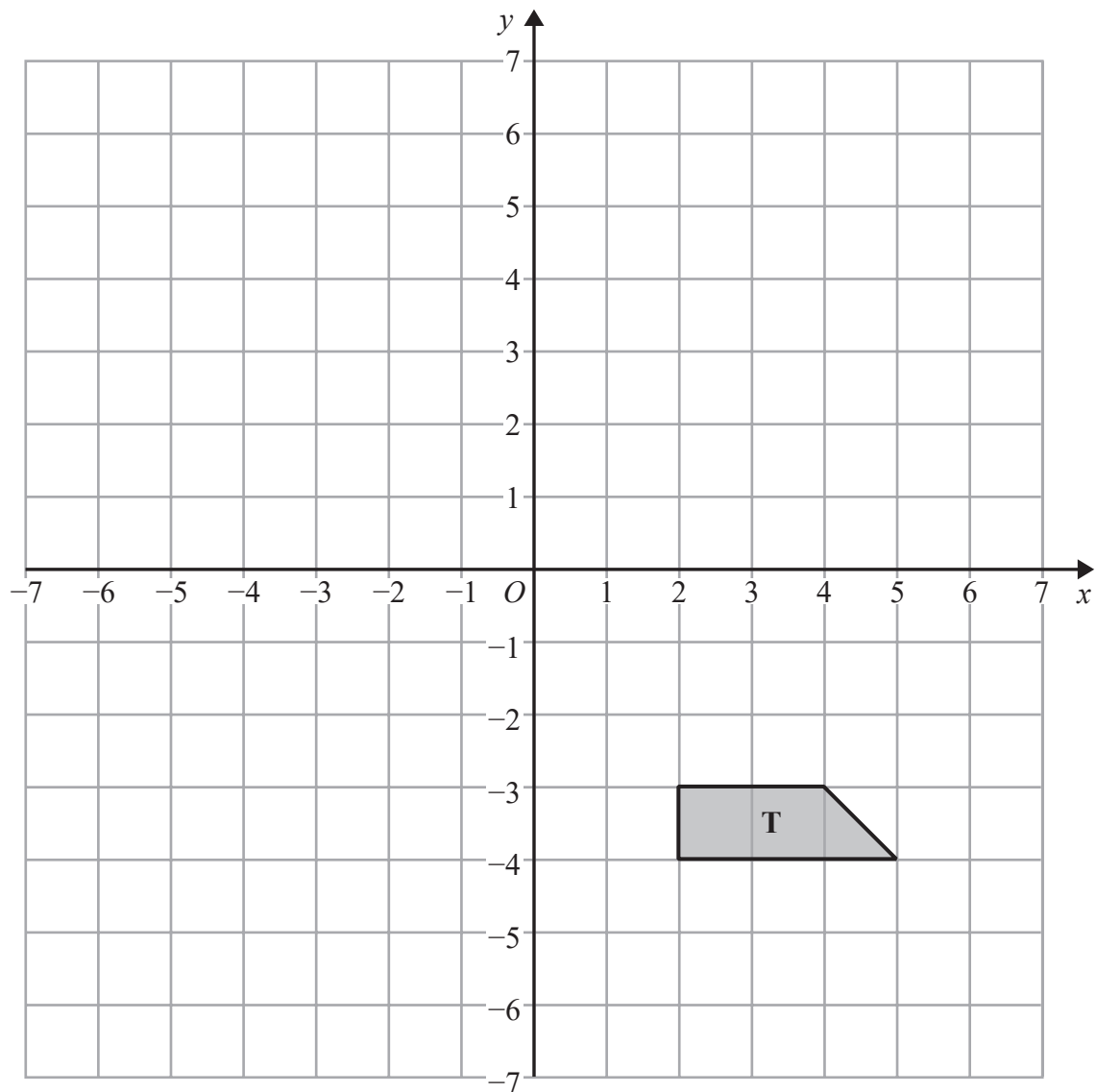# Mock Grade 5

Maths Booklet 2

Paper 2H
Calculator

www.ggmaths.co.uk

1

(a) Rotate trapezium **T** 180° about the origin.
    Label the new trapezium **A**.

(1)

(b) Translate trapezium **T** by the vector $\begin{pmatrix} -1 \\ -4 \end{pmatrix}$
    Label the new trapezium **B**.

(1)

(Total for Question 1 is 2 marks)

2 $p^8 \times p^x = p^{-2}$

(a) Find the value of x.

$x = $ ....

$(7^2)^y = 7^{16}$

(b) Find the value of y.

$y = $ ....

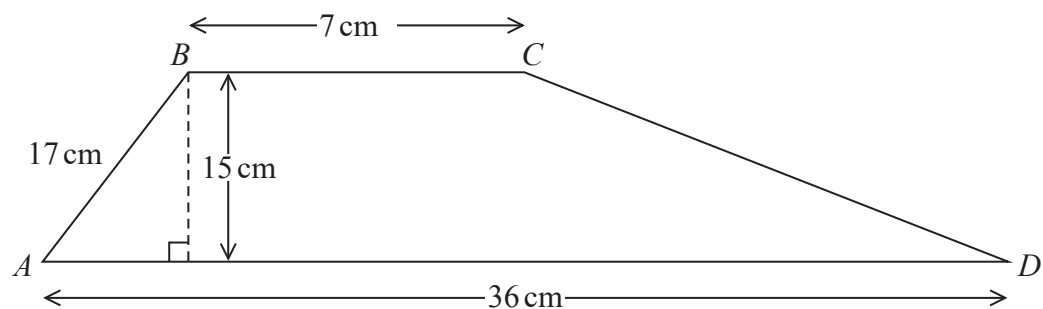$8^a \times 4^b$ can be written in the form 2^w

(c) Show that $w = 3a + 2b$

(Total for Question 2 is 4 marks)

3 *ABCD* is a trapezium.

Work out the size of angle *CDA*.
Give your answer correct to 1 decimal place.

°
....

(Total for Question 4 is 5 marks)

4 The points *L*, *M* and *N* are such that *LMN* is a straight line.

The coordinates of *L* are (−8, 5)

The coordinates of *M* are (0, 9)

Given that *LM* : *MN* = 2 : 3,

find the coordinates of *N*.

(............. , ...)

(Total for Question 4 is 4 marks)

5 A new phone cost £1099
The value of the phone decreases at a rate of 3% per year.

Work out the value of the phone at the end of 4 years.

£..

(Total for Question 5 is 3 marks)

6 In Spain, Sam pays 36 euros for 24 litres of petrol.
In Wales, Leo pays £54.60 for 8 gallons of the same type of petrol.

   1 euro = £0.90
   4.5 litres = 1 gallon

Sam thinks that petrol is cheaper in Spain than in Wales.

Is Sam correct?
You must show how you get your answer.

7 On a farm

the number of cows and the number of sheep are in the ratio 7 : 5
the number of sheep and the number of pigs are in the ratio 3 : 2

The total number of cows, sheep and pigs on the farm is 322

How many sheep are there on the farm?

....

(Total for Question 7 is 3 marks)

8 Use your calculator to work out $\sqrt{\dfrac{\tan 80^\circ + 1}{\tan 80^\circ - 1}}$

(a) Write down all the figures on your calculator display.

....

(2)

(b) Write your answer to part (a) correct to 2 decimal places.

....

(1)

(Total for Question 8 is 3 marks)

9 Yesterday it took 9 cleaners 3.5 hours to clean all the rooms in a hotel.

There are only 3 cleaners to clean all the rooms in the hotel today.

Each cleaner is paid £12.60 for each hour or part of an hour they work.

How much will each cleaner be paid today?

£ ....

(Total for Question 9 is 3 marks)