

# **Mock Grade 5**

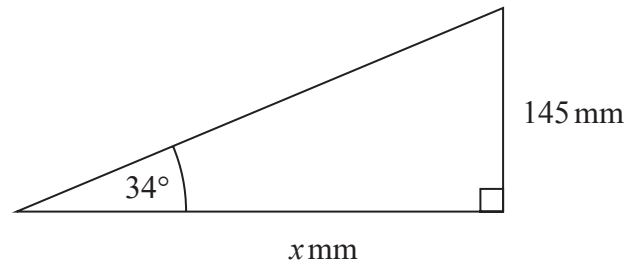
## **Maths**

## **Booklet 4**

Paper 2H  
Calculator

[www.ggmaths.co.uk](http://www.ggmaths.co.uk)

1



Work out the value of  $x$ .  
Give your answer correct to 1 decimal place.

(Total for Question 1 is 2 marks)

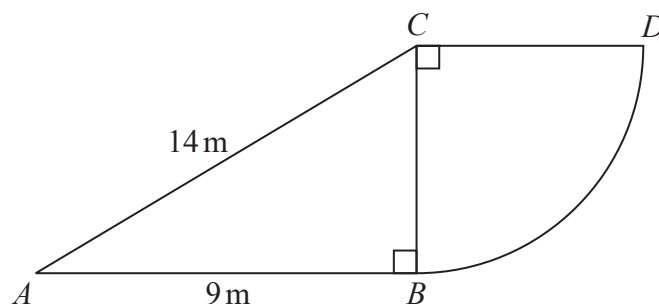
2  $\mathbf{a} = \begin{pmatrix} -2 \\ 3 \end{pmatrix}$  and  $\mathbf{b} = \begin{pmatrix} 5 \\ -1 \end{pmatrix}$

Find  $3\mathbf{a} - 2\mathbf{b}$  as a column vector.

$\begin{pmatrix} \dots \\ \dots \end{pmatrix}$

(Total for Question 2 is 2 marks)

- 3 The diagram shows a right-angled triangle and a quarter circle.



The right-angled triangle  $ABC$  has angle  $ABC = 90^\circ$   
The quarter circle has centre  $C$  and radius  $CB$ .

Work out the area of the quarter circle.  
Give your answer correct to 3 significant figures.  
You must show all your working.

.....  $\text{m}^2$

(Total for Question 3 is 4 marks)

4 Tariq buys a laptop.

He gets a discount of 12% off the normal price.

Tariq pays £554.40 for the laptop.

(a) Work out the normal price of the laptop.

£ .....

(2)

Joan invests £7500 in a savings account.

The savings account pays compound interest at a rate of

3.4% for the first year

1.1% for each extra year.

(b) Work out the value of Joan's investment at the end of 4 years.

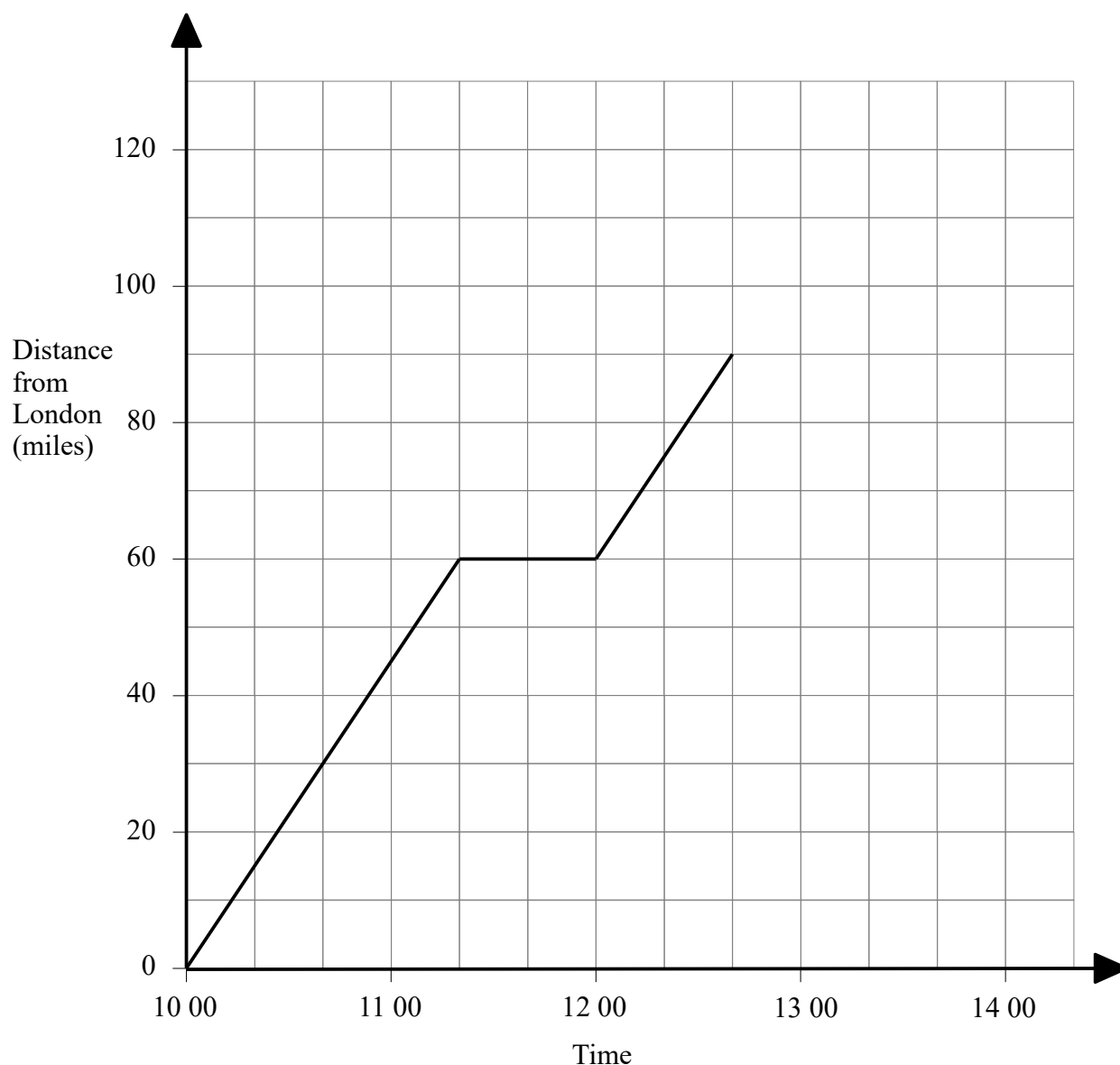
£ .....

(3)

(Total for Question 4 is 5 marks)

- 5 Dawn drove from London to Birmingham. She made one stop at a service station.

Here is part of Dawn's travel graph.



- (a) For how many minutes did Dawn stop at the service station?

.....minutes

(1)

- (b) What was Dawn's average speed between London and the service station?

.....miles/hour

(2)

- (c) Birmingham is 120 miles from London.  
Dawn arrived in Birmingham at 14 00.

Complete the graph.

(2)

(Total for question 5 is 5 marks)

- 6 Toby invested £8800 for 3 years in a savings account.  
He was paid 6% per annum compound interest.

How much money did Toby have in his savings account at the end of 3 years?

£ .....

**(Total for Question 6 is 2 marks)**

- 7 Becky has some marbles.  
Chris has four times as many marbles as Becky.  
Dan has nine more marbles than Chris.

They have a total of 117 marbles.

Dan says,

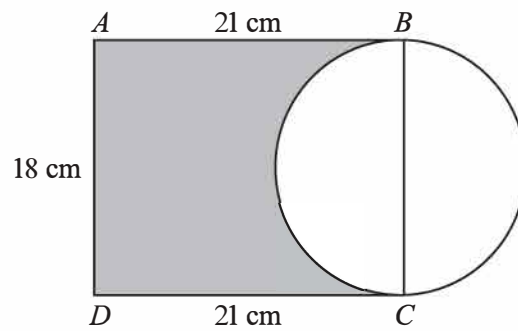
“If I give some marbles to Becky, each of us will have the same number of marbles.”

Is Dan correct?

You must show how you get your answer.

**(Total for Question 7 is 3 marks)**

- 8 Here is a diagram showing a rectangle,  $ABCD$ , and a circle.



$BC$  is a diameter of the circle.

Calculate the percentage of the area of the rectangle that is shaded.  
Give your answer correct to 1 decimal place.

..... %

(Total for Question 8 is 4 marks)