Mock Grade 5

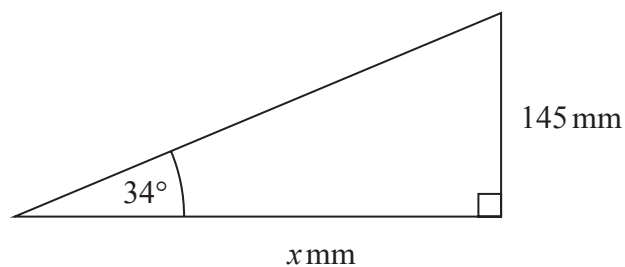# Maths Booklet 4

Paper 2H
Calculator

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1

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

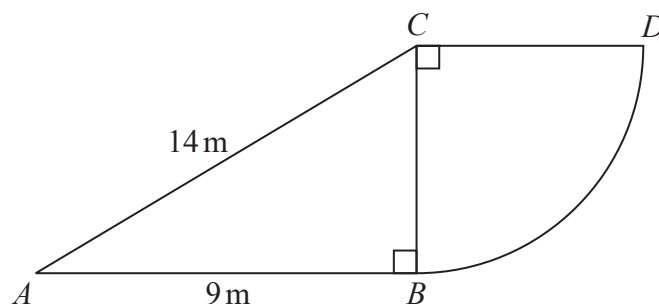...

(Total for Question 1 is 2 marks)

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

Find $3a - 2b$ as a column vector.

$\begin{pmatrix} .... \\ .... \end{pmatrix}$

(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 $ABC = 90°$
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.

.... m²

(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.

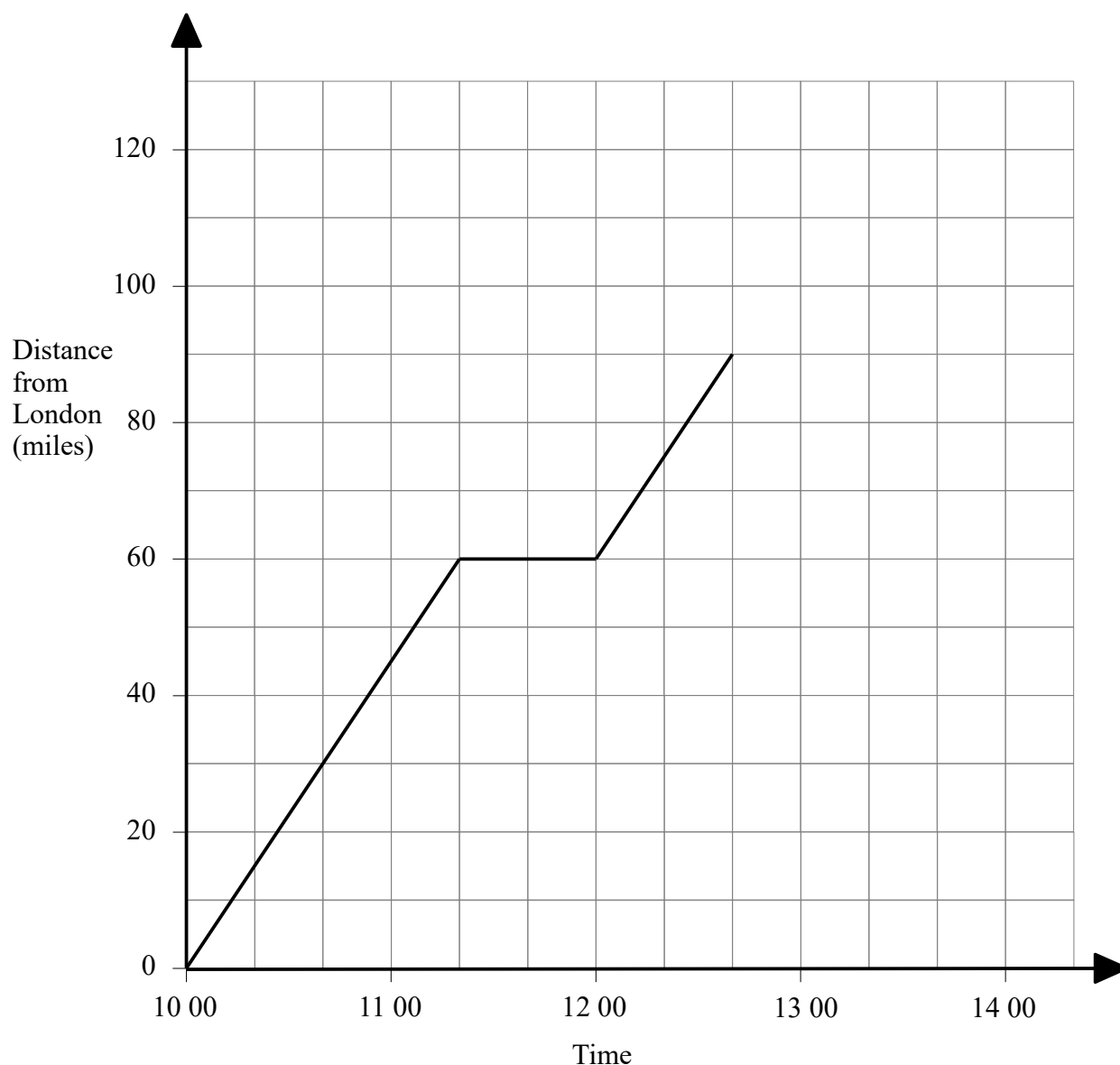(b) Work out the value of Joan's investment at the end of 4 years.

£..
(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 f our times as many marbles as Becky.
Dan has nine more marbles than Chris.
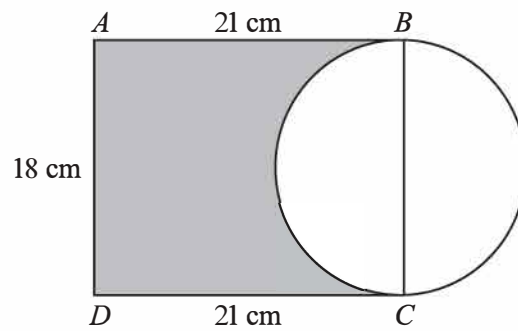
They have a total of 117 marbles.

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)