

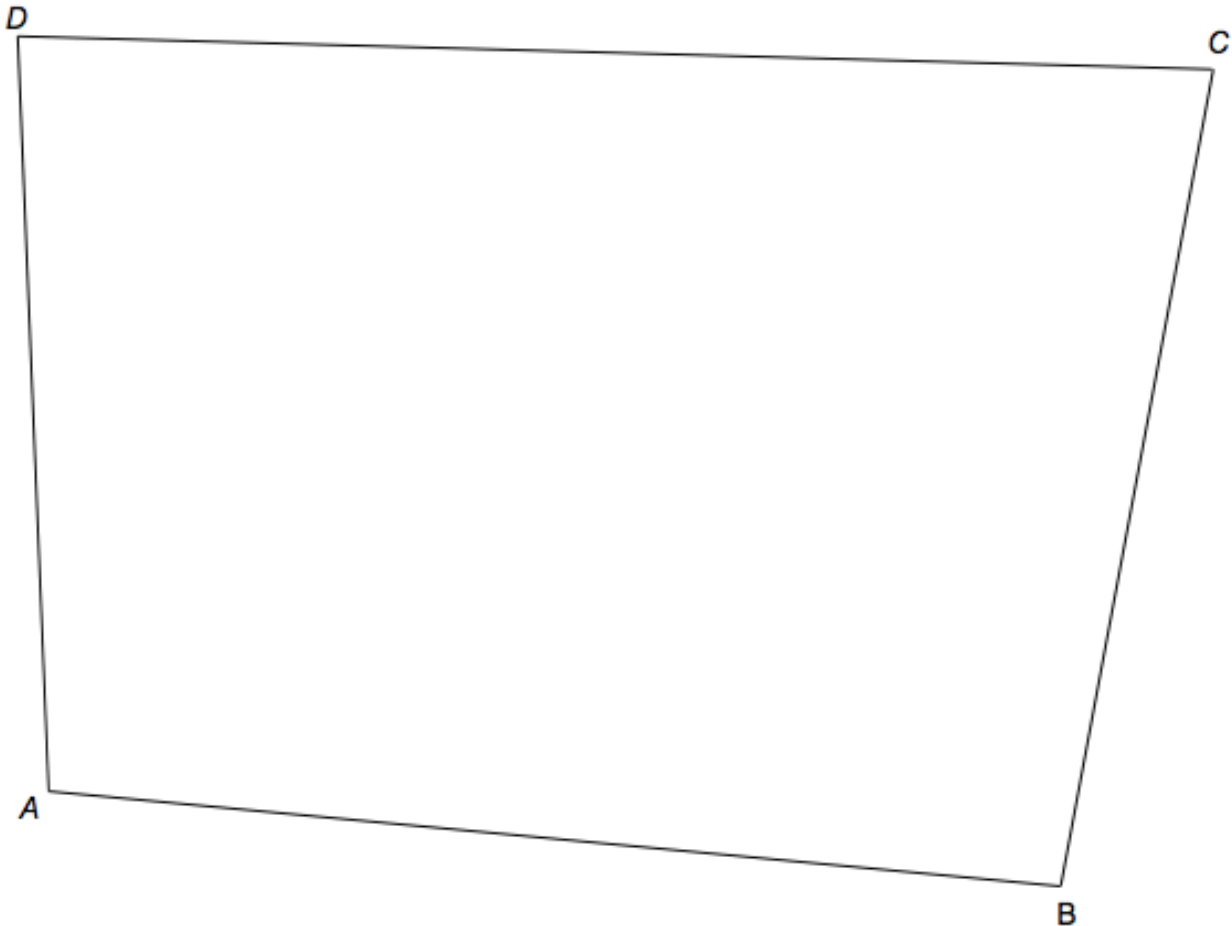
## Revision F3 (All topics) B [42]

1.

Use ruler and compasses to answer this question.

Point  $P$  is

- the same distance from  $AB$  and  $AD$
- 6 cm from  $C$ .



Show the position of  $P$  on the diagram.

[3 marks]

2.

Find the value of  $4\frac{2}{3} - 2\frac{3}{4}$

(Total 3 marks)

3. **Non-calculator**

Calculate 15% of  $3 \times 10^7$

Give your answer in standard form.

(Total 2 marks)

4.  $S = 2\pi r^2 + 2\pi rh$

(a) Work out the value of  $S$  when  $r = 4$  and  $h = 7$ . Give your answer to 4 significant figures.

(b) Work out the value of  $h$  when  $S = 500$  and  $r = 3.8$ . Give your answer to 3 significant figures.

(Total 5 marks)

5.

Below are three graphs.

Match each graph with one of the following equations.

Equation A:  $y = 3x - p$

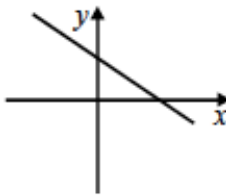
Equation B:  $y = x^2 + p$

Equation C:  $3x + 4y = p$

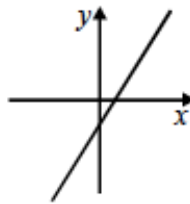
Equation D:  $y = px^3$

In each case  $p$  is a positive number.

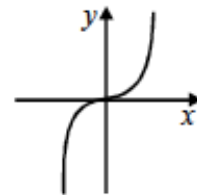
(i)



(ii)

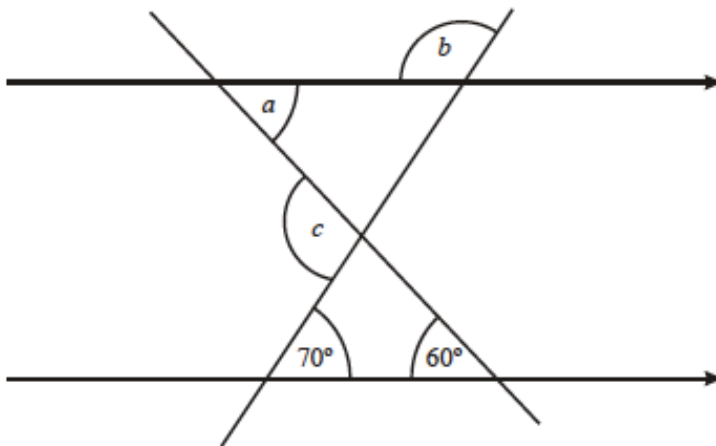


(iii)



(Total 3 marks)

6.



Not drawn accurately

Work out the values of  $a$ ,  $b$  and  $c$ .

(Total 3 marks)

7.

Solve these equations.

(a)  $6r + 2 = 8$

(2)

(b)  $\frac{x}{4} = 8$

(1)

(c)  $7s + 2 = 5s + 3$

(3)

(d)  $\frac{12-y}{3} = 5$

(3)

(Total 9 marks)

8.

The map shows two radio masts, Y and Z.



(a) Mast X is on a bearing of  $132^\circ$  from Y and on a bearing of  $252^\circ$  from Z.

Mark accurately the position of mast X on the map.

[3]

(b) The map scale is 2 cm represents 25 km.

(i) The scale can be written in the form  $1 : n$ .

Find the value of  $n$ .

(ii) Work out the actual distance between Y and Z.

(Total 7 marks)

9.

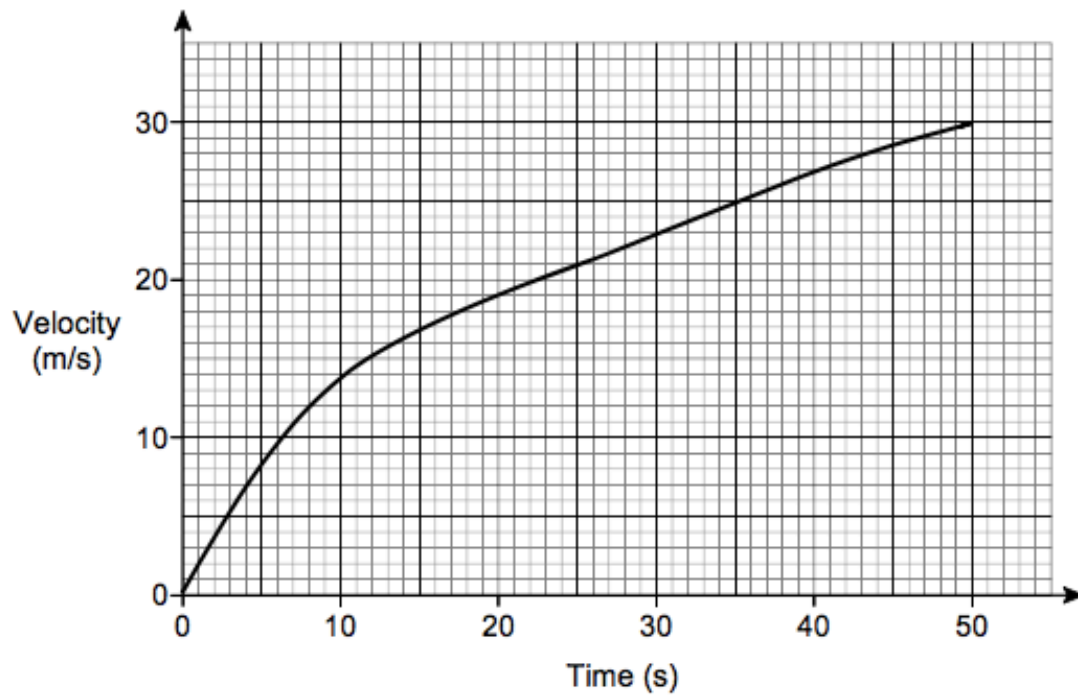
John has 70 books. This total is 40% more than the number of books that he had one year ago.

How many books did he have one year ago?

(Total 3 marks)

10. **Non-calculator**

Here is the velocity-time graph of a car for 50 seconds.



- (a) Work out the average acceleration during the 50 seconds.  
Give the units of your answer.

[2 marks]

- (b) Estimate the time during the 50 seconds when  
the instantaneous acceleration = the average acceleration

You **must** show your working on the graph.

[2 marks]

(Total 4 marks)