

Name

Class



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# Angles in parallel lines

(9 – 1) Topic booklet

## HIGHER

These questions have been collated from previous years GCSE Mathematics papers.

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

### Information

- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

### Advice

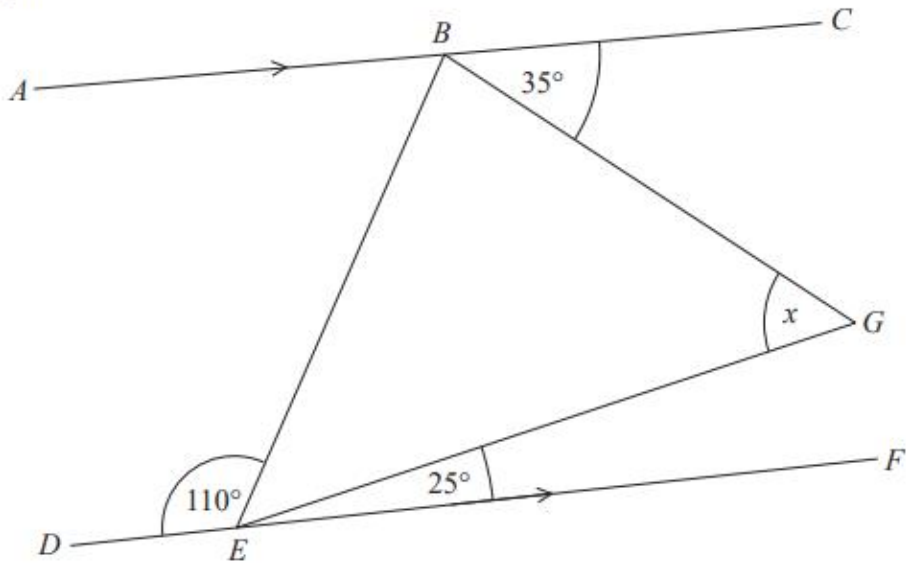
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**Answer ALL questions**

**Write your answers in the space provided.**

**You must write down all the stages in your working.**

**3**  $BEG$  is a triangle.

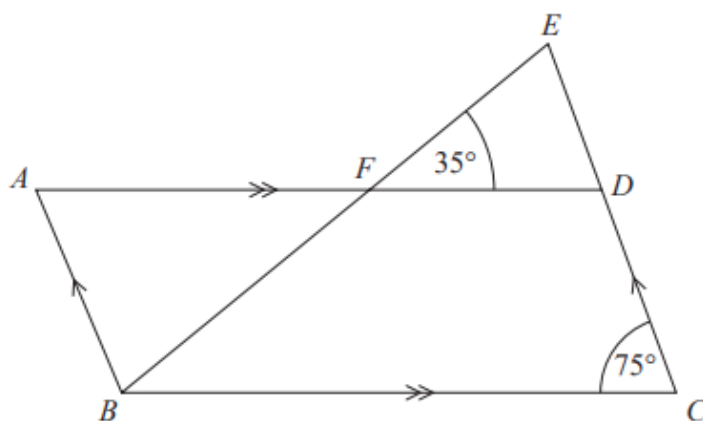


$ABC$  and  $DEF$  are parallel lines.

Work out the size of angle  $x$ .

Give a reason for each stage of your working.

3



$ABCD$  is a parallelogram.

$EDC$  is a straight line.

$F$  is the point on  $AD$  so that  $BFE$  is a straight line.

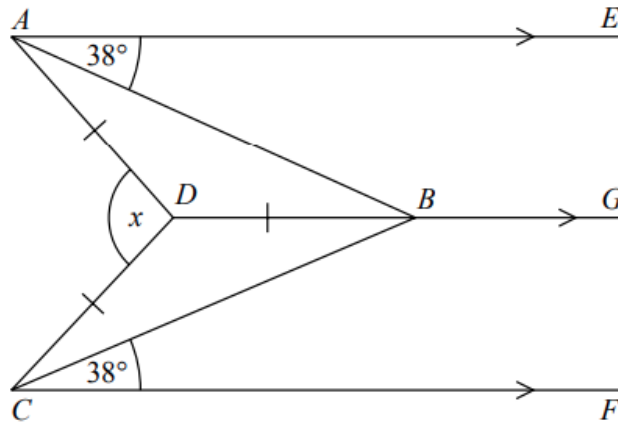
Angle  $EFD = 35^\circ$

Angle  $DCB = 75^\circ$

Show that angle  $ABF = 70^\circ$

Give a reason for each stage of your working.

3



$AE$ ,  $DBG$  and  $CF$  are parallel.

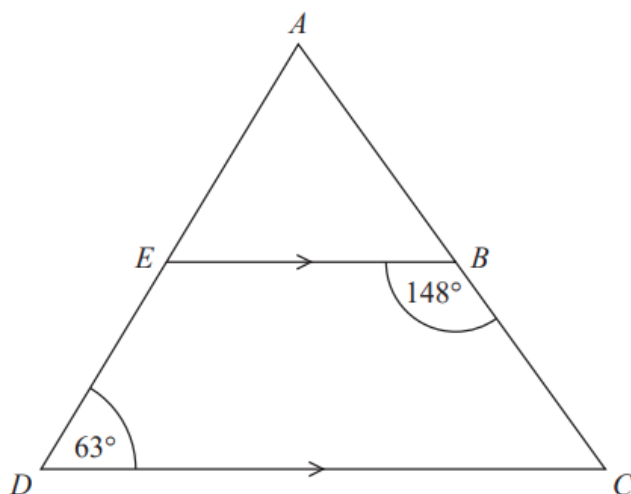
$DA = DB = DC$ .

Angle  $EAB = \text{angle } BCF = 38^\circ$

Work out the size of the angle marked  $x$ .

You must show your working.

6  $ADC$  is a triangle.



$AED$  and  $ABC$  are straight lines.

$EB$  is parallel to  $DC$ .

Angle  $EBC = 148^\circ$

Angle  $ADC = 63^\circ$

Work out the size of angle  $EAB$ .

You must give a reason for each stage of your working.