

# Edexcel GCSE

## Mathematics (Linear) – 1MA0

# ANGLES: SOLUTIONS

# PARALLEL LINES

**Materials required for examination**

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.  
Tracing paper may be used.

**Items included with question papers**

Nil

**Instructions**

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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.

Calculators may be used.

**Information**

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

Questions labelled with an **asterisk** (\*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.

**Advice**

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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.

1.

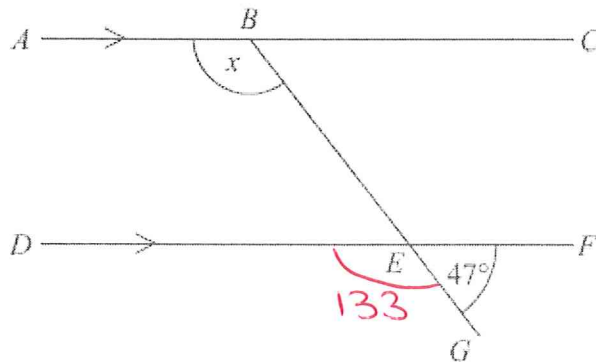


Diagram NOT  
accurately drawn

$ABC$  and  $DEF$  are parallel lines.  
 $BEG$  is a straight line.  
Angle  $GEF = 47^\circ$ .

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

Give reasons for your answer.

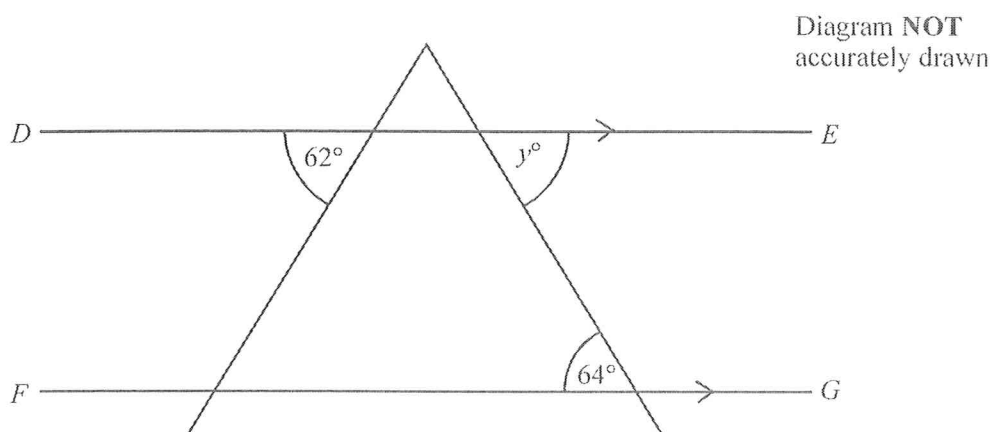
$$180 - 47 = 133 \quad (\text{Angles on a straight line add to } 180)$$

Corresponding angles are equal  
therefore  $x = 133$

133°

(3 marks)

2.



$DE$  is parallel to  $FG$ .

- (i) Find the size of the angle marked  $y^\circ$ .

64°

(1)

- (ii) Give a reason for your answer.

Alternate angles are equal

(2)

(3 marks)

3.

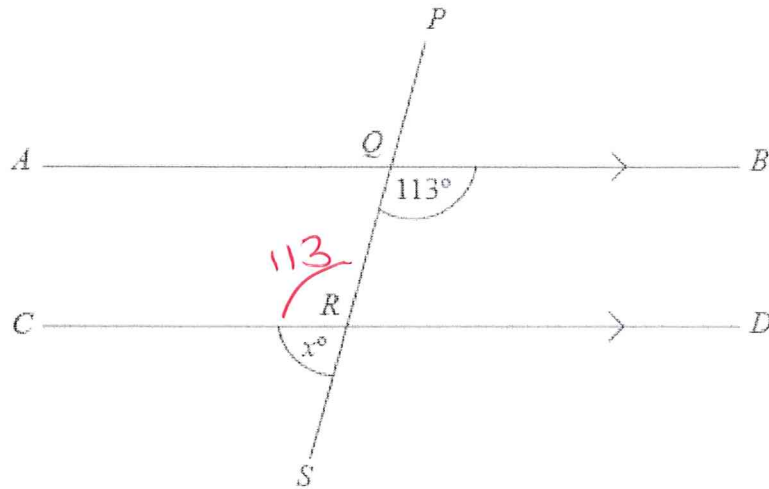


Diagram NOT  
accurately drawn

$AQB$ ,  $CRD$  and  $PQRS$  are straight lines.

$AB$  is parallel to  $CD$ .

Angle  $BQR = 113^\circ$ .

(a) Work out the value of  $x$ .

$$180 - 113 = 67$$

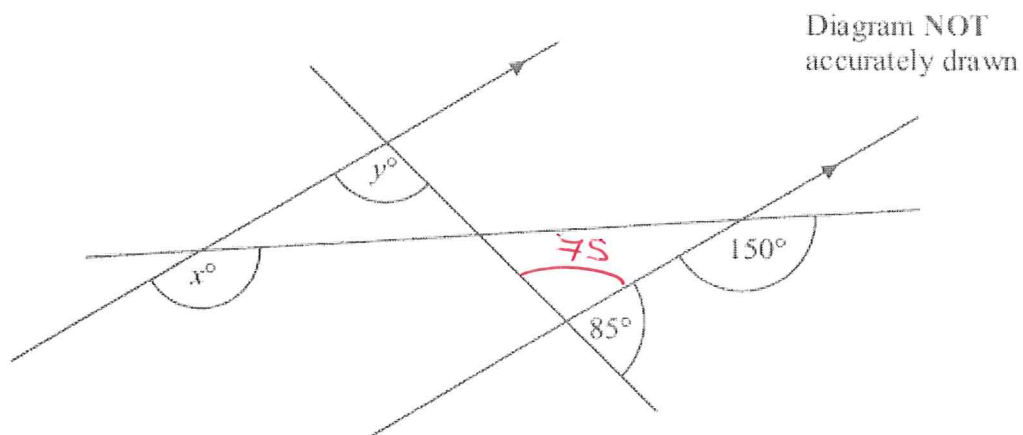
$$x = 67$$

(b) Give reasons for your answer.

Alternate angles are equal  
Angles on a straight line add to 180

(4 marks)

4.



- (a) i) Find the value of  $x$ .

150

(1)

- ii) Give reasons for your answer.

Corresponding angles are equal

(1)

- (b) i) Find the value of  $y$ .

$$180 - 85 = 95$$

95

(2)

- ii) Give reasons for your answer.

Angles on a line = 180

Alternate angles are equal

(2)

(6 marks)

\*5.

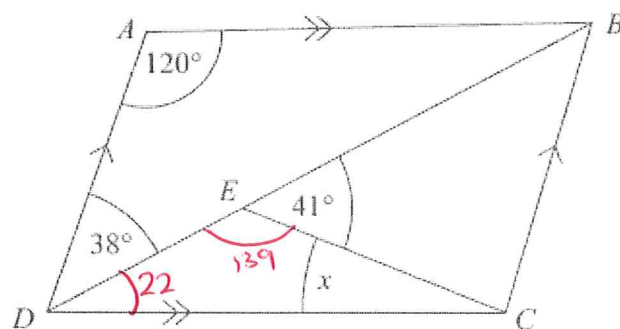


Diagram NOT  
accurately drawn

*ABCD* is a parallelogram.

Angle  $ADB = 38^\circ$ .

Angle  $BEC = 41^\circ$ .

Angle  $DAB = 120^\circ$ .

Calculate the size of angle  $x$ .

You must give reasons for your answer.

$$180 - 120 - 38 = 22$$

Interior angles add to 180

$$180 - 41 = 139$$

Angles on a line add to 180

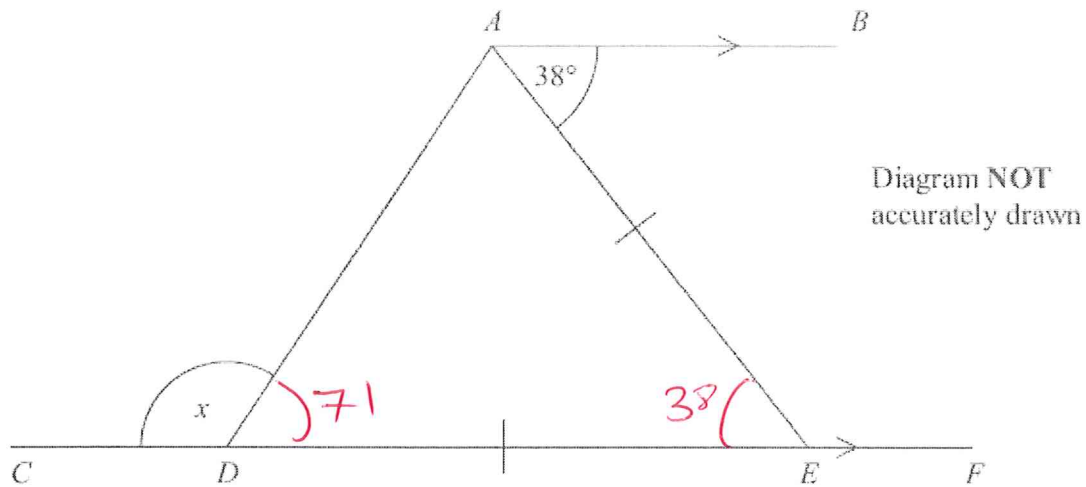
$$180 - 139 - 22 = 19$$

Angles in a triangle add to 180.

$$x = 19$$

(4 marks)

\*6.



$CDEF$  is a straight line.

$AB$  is parallel to  $CF$ .

$DE = AE$ .

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

You must give reasons for your answer.

$$\angle DEA = 38$$

Alternate angles are equal

$$180 - 38 = 142$$

Angles in a triangle add to 180

$$142 \div 2 = 71$$

Base angles in an isosceles triangle are equal

$$180 - 71 = 109$$

Angles on a line add to 180.

$$x = 109$$

(4 marks)



\*7.

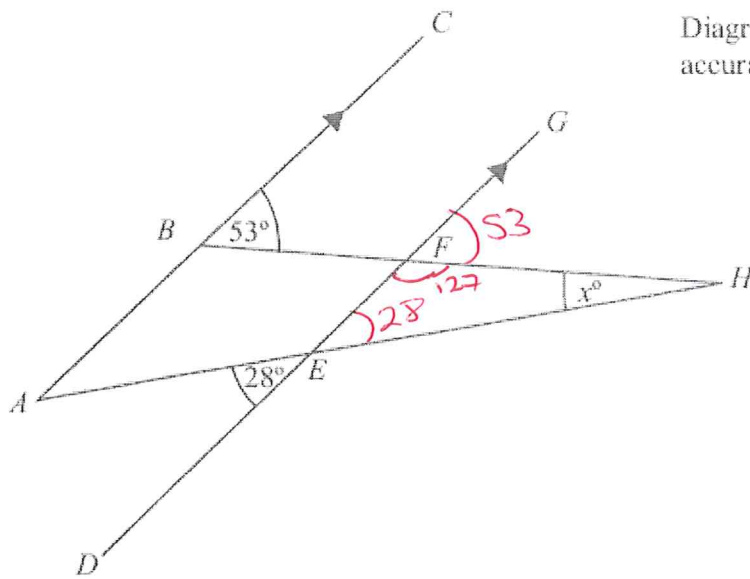


Diagram NOT  
accurately drawn

$ABC$  and  $DEFG$  are parallel.

$AEH$  and  $BFH$  are straight lines.

Work out the size of the angle marked  $x^\circ$ .

$$\angle FEH = 28$$

Vertically opposite angles are equal

$$\angle GFH = 53$$

Corresponding angles are equal

$$180 - 53 = 127$$

Angles on a line add to 180

$$180 - 127 - 28 = 25$$

Angles in a triangle add to 180

25

(3 marks)