

# Edexcel GCSE Mathematics (Linear) – 1MA0

# ANGLES: 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.

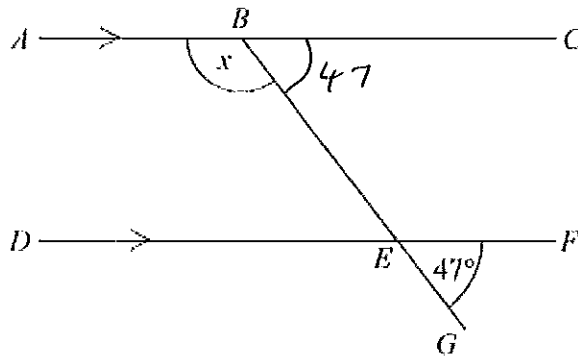


Diagram NOT  
accurately drawn

$ABC$  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.

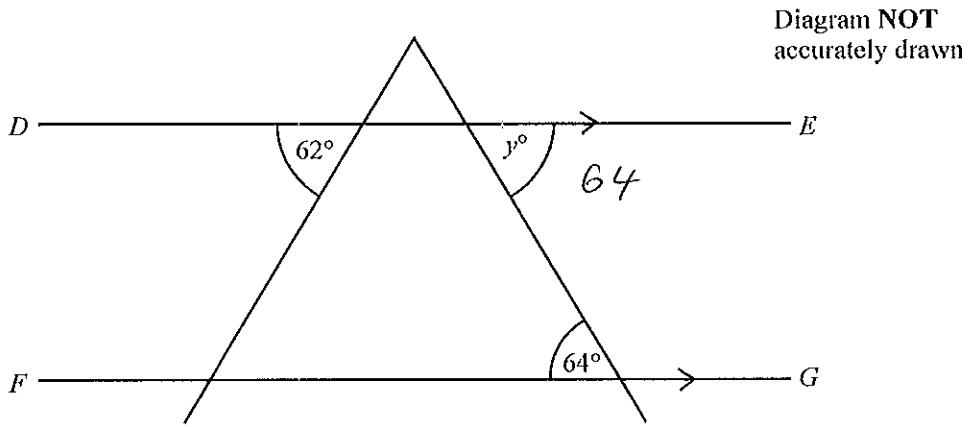
$\hat{CBE} = 47^\circ$  corresponding angles are equal

$x = 133^\circ$  Angles on a straight line  
add up to  $180^\circ$

.....133.....°

(3 marks)

2.



$DE$  is parallel to  $FG$ .

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

.....64..... $^\circ$

(1)

- (ii) Give a reason for your answer.

.....alternate angles are equal.....

.....

(2)

(3 marks)

3.

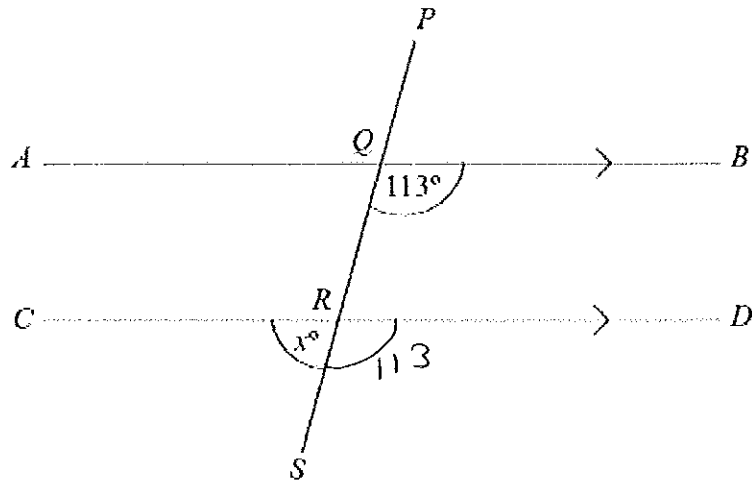


Diagram NOT accurately drawn

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

$AB$  is parallel to  $CD$ .

Angle  $BQR = 113^\circ$ .

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

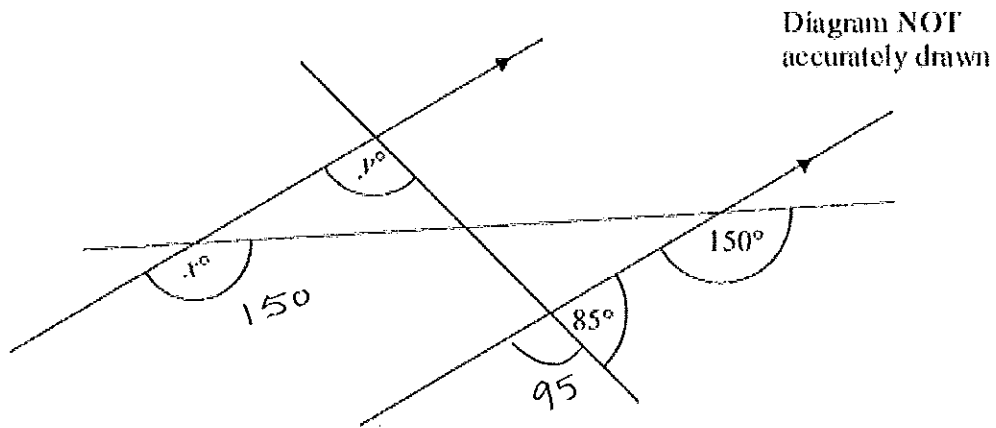
$x = \dots\dots 67 \dots\dots$

(b) Give reasons for your answer.

Corresponding angles are equal  
Angles on a straight line add up to  $180^\circ$

(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  $y$ .

.....  
95°  
..... (2)

ii) Give reasons for your answer.

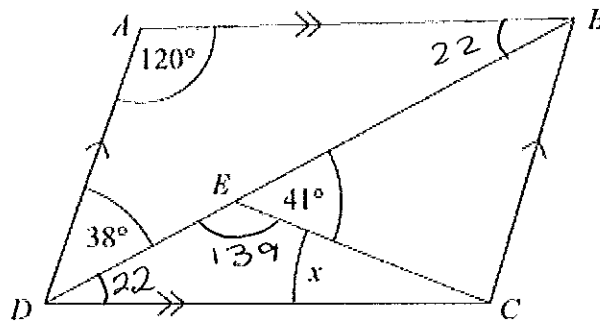
angles on a straight line add up to  $180^\circ$   
corresponding angles are equal

.....  
(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.

$$\hat{A}BD = 22^\circ \quad (\text{Angles in a triangle add up to } 180^\circ)$$

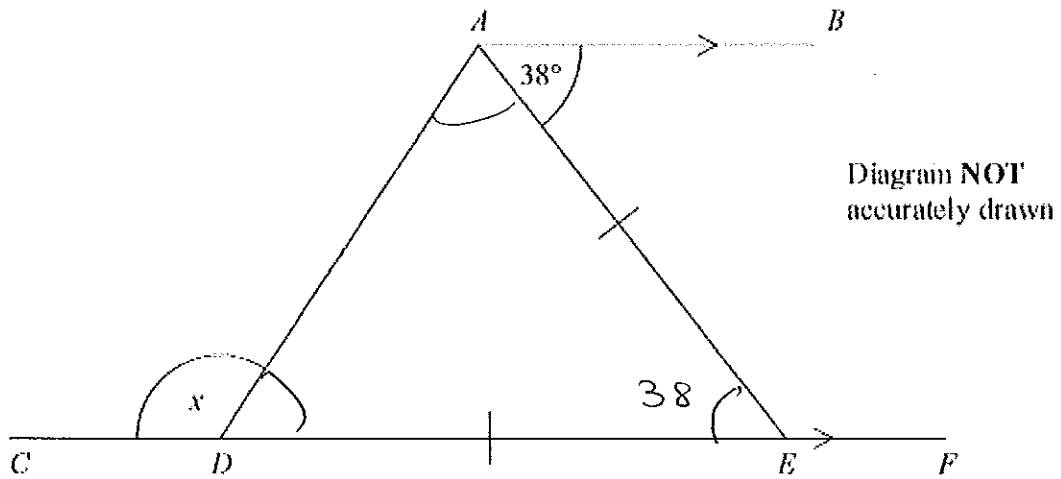
$$\hat{B}DC = 22^\circ \quad (\text{Alternate angles are equal})$$

$$\hat{C}ED = 139^\circ \quad (\text{Angles on a straight line add up to } 180^\circ)$$

$$x = \underline{\underline{19^\circ}} \quad (\text{Angles in a triangle add up to } 180^\circ)$$

(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.

$$\hat{AED} = 38^\circ \quad \text{Alternate angles are equal}$$

$$\hat{ADE} \text{ and } \hat{DAE} = 71^\circ \quad (\text{Angles at base of isosceles are equal})$$

$$\underline{\underline{x = 109^\circ}} \quad (\text{Angles on a straight line add up to } 180^\circ)$$

(4 marks)

\*7.

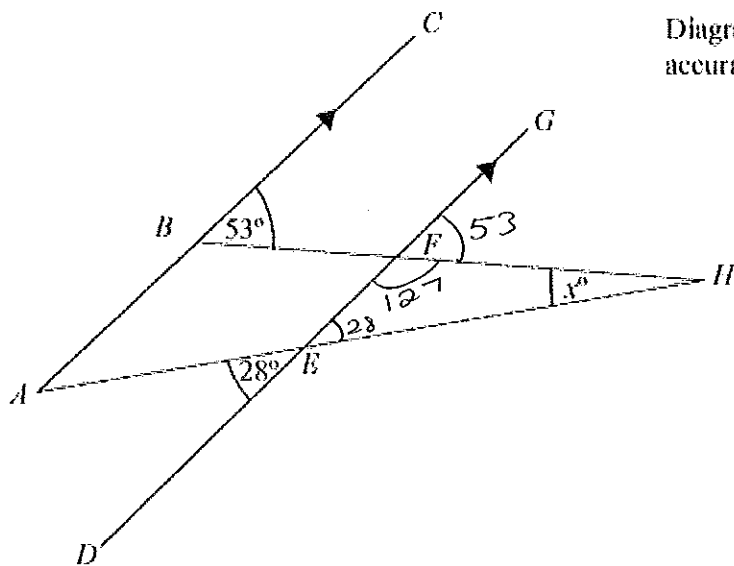


Diagram NOT  
accurately drawn

$ABC$  and  $DEF$  are parallel.  
 $AEH$  and  $BFH$  are straight lines.  
Work out the size of the angle marked  $x^\circ$ .

$$\hat{GEH} = 28^\circ \quad \text{opposite angles are equal}$$

$$\hat{GFH} = 53^\circ \quad \text{alternate angles are equal}$$

$$\hat{EFH} = 127 \quad \text{angles on a straight line add to } 180^\circ$$

$$x = 25^\circ \quad \text{angles in a triangle add to } 180^\circ$$

.....25.....  
(3 marks)