

- 1  $ABC$  is a straight line and  $BCD$  is a triangle.

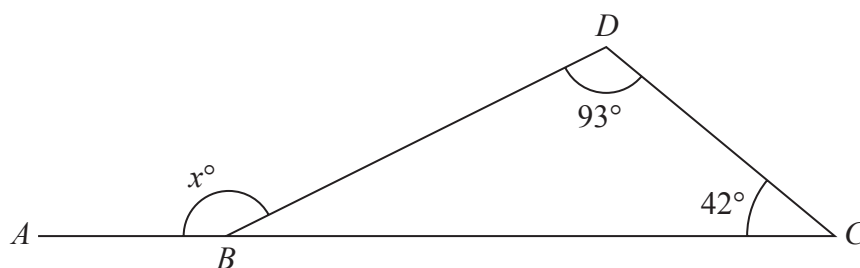


Diagram **NOT**  
accurately drawn

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

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

(2)

$PO$ ,  $RO$ ,  $SO$  and  $TO$  are four straight lines.

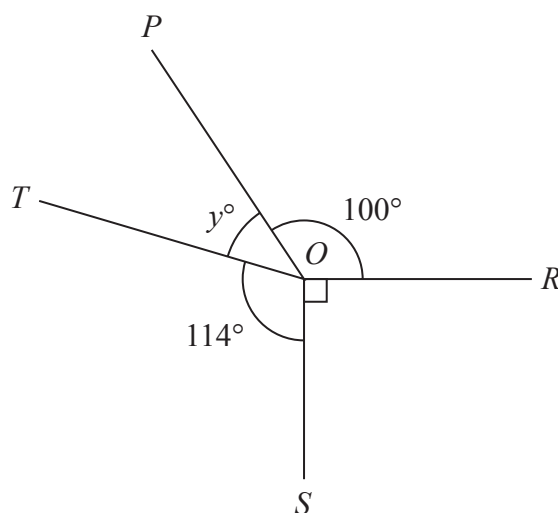


Diagram **NOT**  
accurately drawn

- (b) (i) Work out the value of  $y$

$$y = \dots\dots\dots$$

(2)

- (ii) Give a reason for your answer.

(1)

(Total for Question 1 is 5 marks)

2 The diagram shows triangle  $ABD$

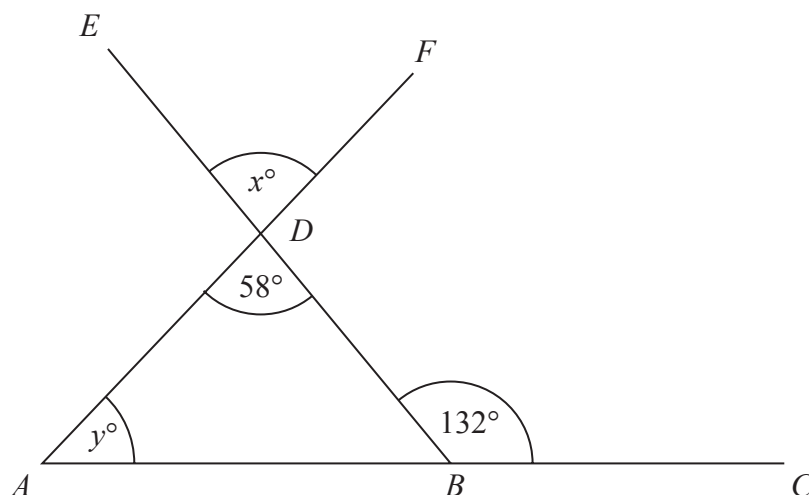


Diagram **NOT**  
accurately drawn

$ABC$ ,  $BDE$  and  $ADF$  are straight lines.

angle  $CBD = 132^\circ$       angle  $ADB = 58^\circ$

(a) (i) Write down the value of  $x$

$x =$  .....

(ii) Give a reason for your answer.

(2)

(b) Work out the value of  $y$

$y =$  .....

(2)

(Total for Question 2 is 4 marks)

3

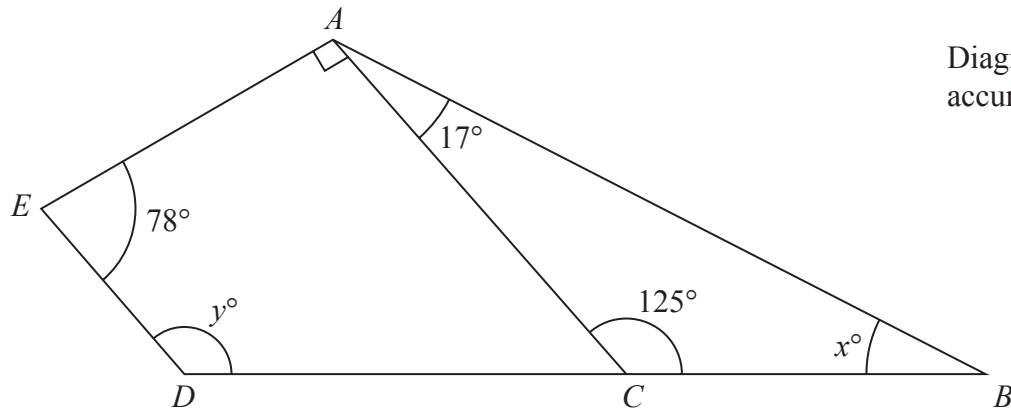


Diagram **NOT**  
accurately drawn

$ABDE$  is a quadrilateral.  
 $ABC$  is a triangle.  
 $DCB$  is a straight line.

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

$x = \dots\dots\dots$   
 (1)

(ii) Give a reason for your answer.

(1)

(b) Work out the value of  $y$ .  
 Give a reason for each stage of your working.

$y = \dots\dots\dots$   
 (3)

(Total for Question 3 is 5 marks)

4

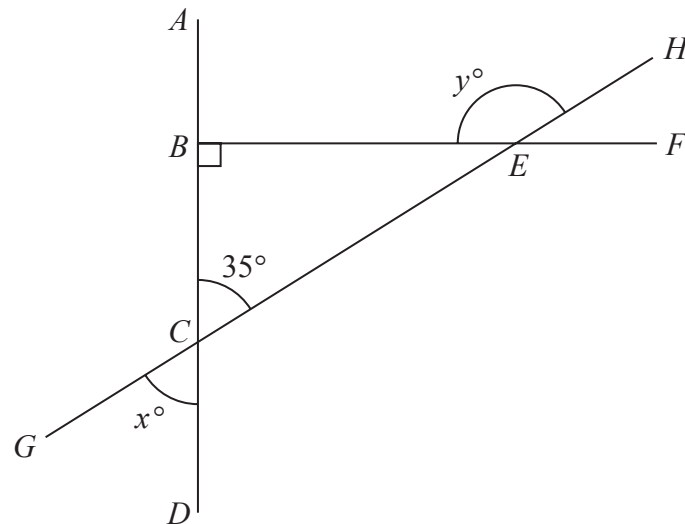


Diagram **NOT**  
accurately drawn

In the diagram,  $BCE$  is a right-angled triangle.  
 $ABCD$ ,  $BEF$  and  $GCEH$  are straight lines.

Angle  $BCE = 35^\circ$

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

$x = \dots\dots\dots$   
(1)

(ii) Give a reason for your answer.

(1)

(b) (i) Work out the value of  $y$

$y = \dots\dots\dots$   
(2)

(ii) Give a reason for your answer.

(1)

(Total for Question 4 is 5 marks)

5 The diagram shows two parallel lines  $AB$  and  $DEF$

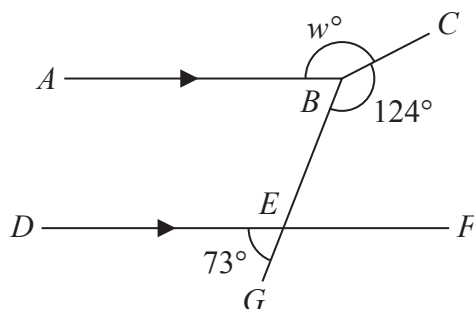


Diagram **NOT**  
accurately drawn

$BEG$  is a straight line.

$$\text{angle } DEG = 73^\circ \quad \text{angle } EBC = 124^\circ \quad \text{angle } ABC = w^\circ$$

Work out the value of  $w$

Give reasons for each stage of your working.

$$w = \dots\dots\dots$$

(Total for Question 5 is 4 marks)

6

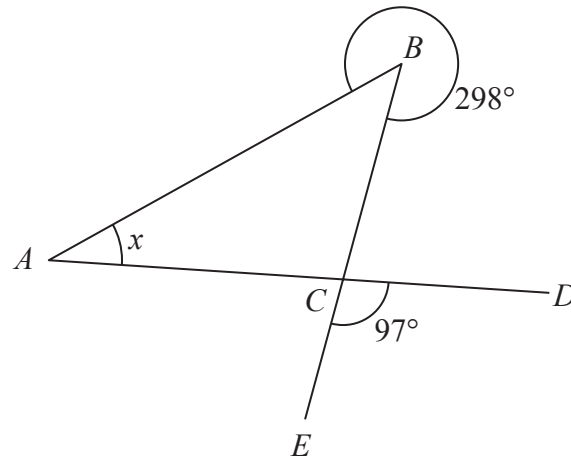


Diagram **NOT**  
accurately drawn

$ABC$  is a triangle.

$D$  and  $E$  are points such that  $ACD$  and  $BCE$  are straight lines.

reflex angle  $ABC = 298^\circ$

angle  $ECD = 97^\circ$

Work out the size of angle  $x$ .

Give a reason for each stage of your working.

$x = \dots\dots\dots^\circ$

(Total for Question 6 is 4 marks)

7

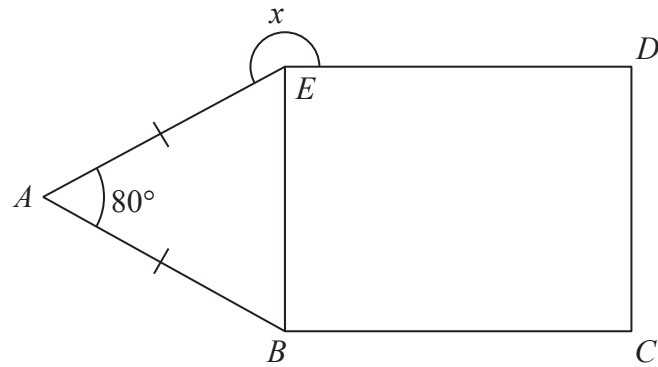


Diagram **NOT**  
accurately drawn

$BCDE$  is a rectangle.

$ABE$  is an isosceles triangle.

$AB = AE$

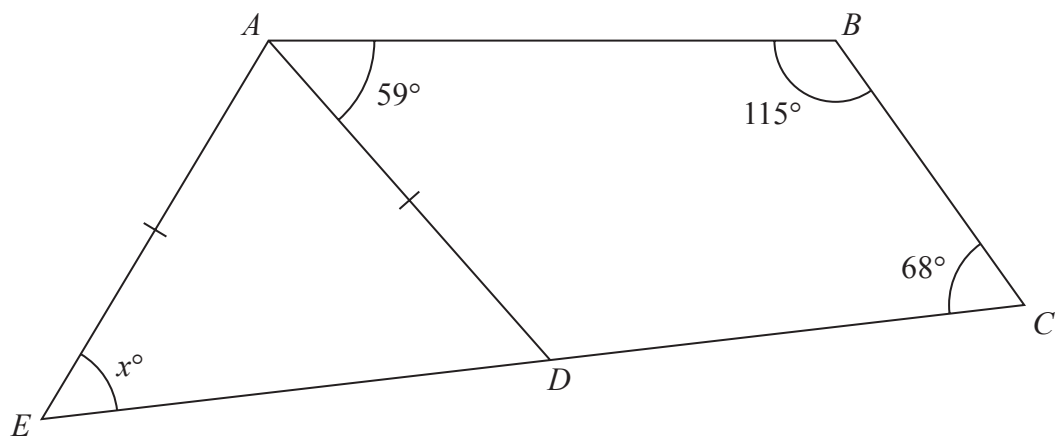
Angle  $BAE = 80^\circ$

Work out the size of angle  $x$ .

o

(Total for Question 7 is 3 marks)

- 8 The diagram shows quadrilateral  $ABCD$  and isosceles triangle  $ADE$ , where  $AE = AD$ .



$EDC$  is a straight line.

Work out the value of  $x$ .

Give a reason for each stage of your working.

$x = \dots\dots\dots$

(Total for Question 8 is 4 marks)



- 9 The diagram shows a trapezium  $ABCD$  in which  $AB$  and  $DC$  are parallel.

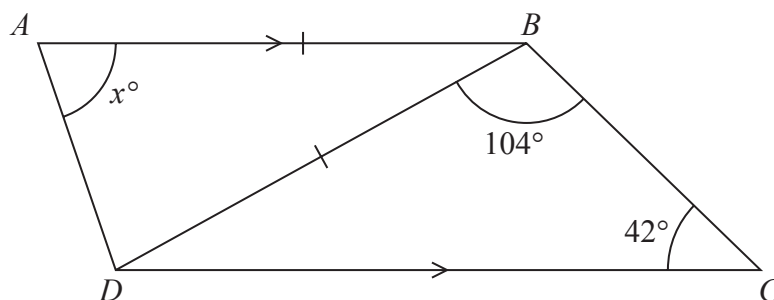


Diagram **NOT**  
accurately drawn

$$AB = DB$$

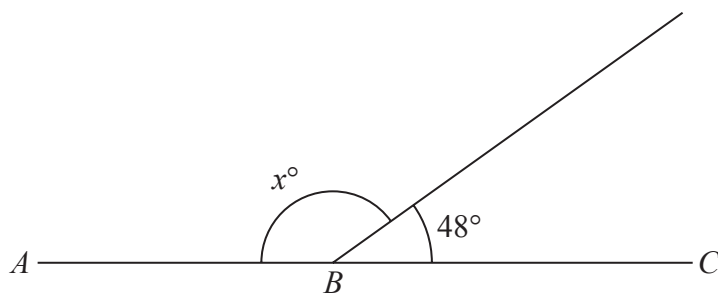
Work out the value of  $x$ .  
Give a reason for each stage of your working.

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

(Total for Question 9 is 4 marks)

10

Diagram **NOT**  
accurately drawn



$ABC$  is a straight line.

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

$x =$  .....  
(1)

(ii) Give a reason for your answer to (i)

.....  
(1)

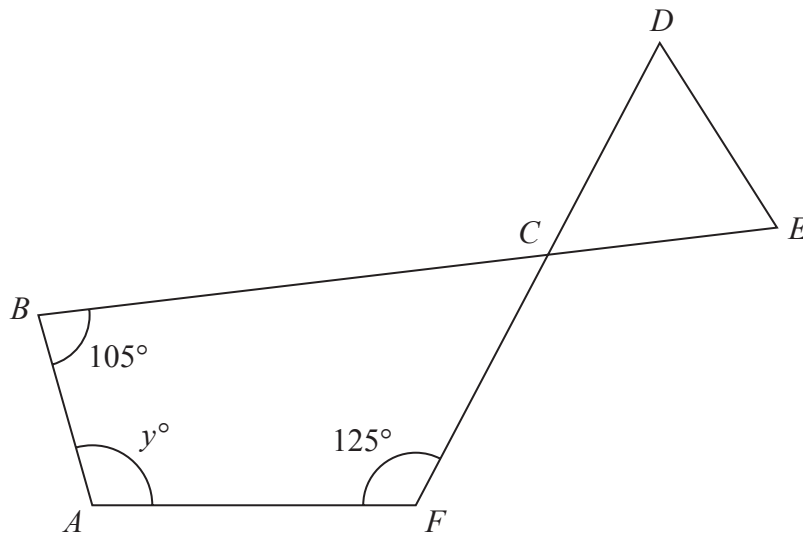


Diagram **NOT**  
accurately drawn

$CDE$  is an equilateral triangle.

$ABCF$  is a quadrilateral.

$BCE$  and  $DCF$  are straight lines.

- (b) Work out the value of  $y$   
You must show your working.

$y = \dots\dots\dots$   
(3)

(Total for Question 10 is 5 marks)

11

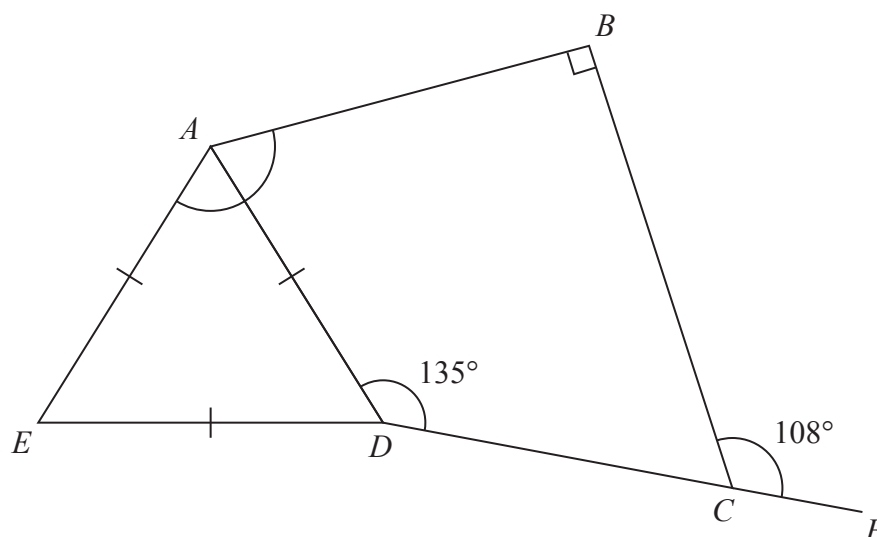


Diagram **NOT**  
accurately drawn

$ABCD$  is a quadrilateral.

$ADE$  is an equilateral triangle.

$DCF$  is a straight line.

Work out the size of angle  $EAB$ .

Give a reason for each stage of your working.

(Total for Question 11 is 5 marks)

- 12 The diagram shows two triangles,  $CDB$  and  $BDA$ .

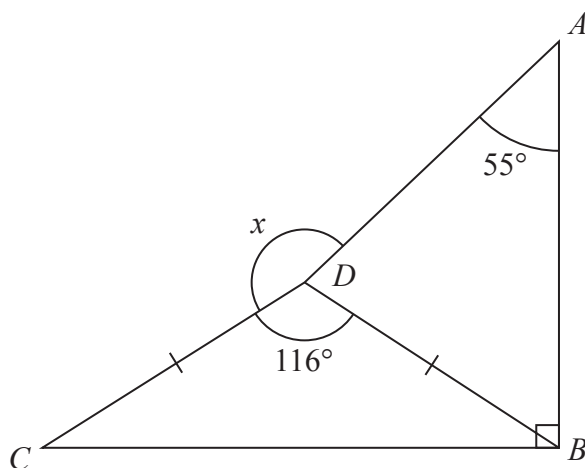


Diagram **NOT**  
accurately drawn

$$DC = DB$$

$$\text{Angle } ABC = 90^\circ$$

$$\text{Angle } CDB = 116^\circ$$

$$\text{Angle } DAB = 55^\circ$$

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

Give a reason for each stage of your working.

(Total for Question 12 is 5 marks)

13

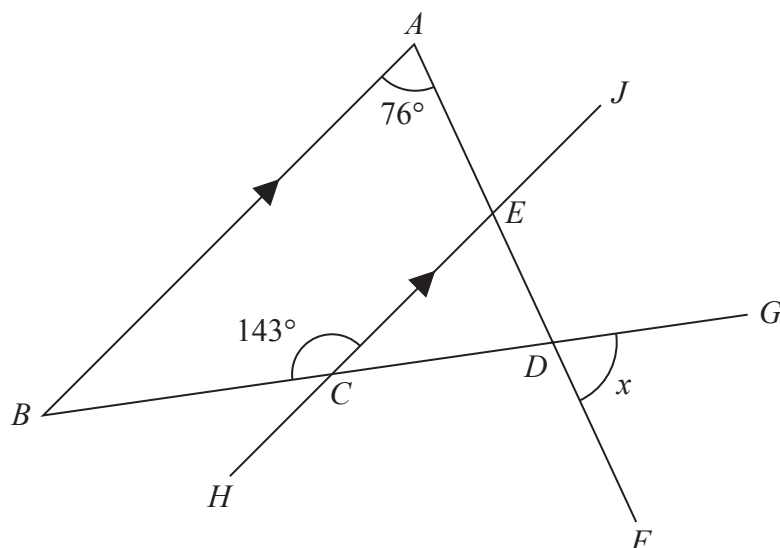


Diagram **NOT**  
accurately drawn

$ABD$  is a triangle.

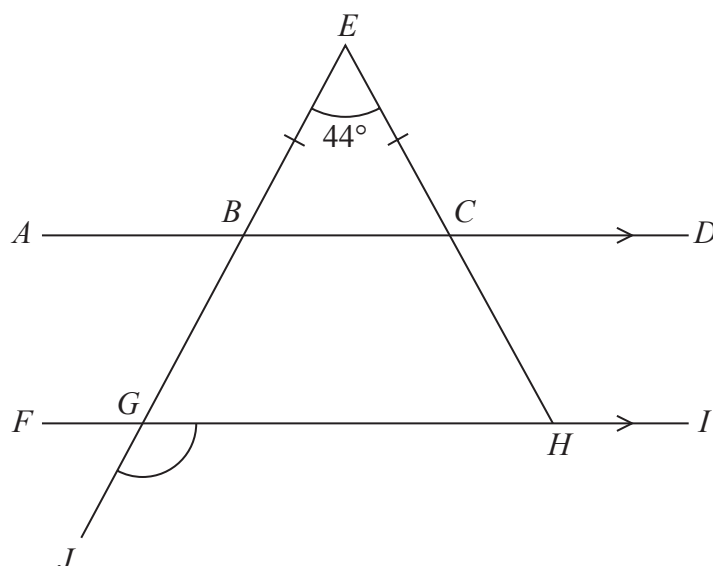
$AEDF$ ,  $BCDG$  and  $HCEJ$  are straight lines.

$BA$  is parallel to  $HCEJ$ .

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

(Total for Question 13 is 3 marks)

Diagram **NOT**  
accurately drawn



$ABCD$  and  $FGHI$  are parallel straight lines.  
 $EBGJ$  and  $ECH$  are straight lines.

$$BE = CE$$

$$\text{Angle } BEC = 44^\circ$$

Work out the size of angle  $JGH$ .

Give a reason for each stage of your working.

(Total for Question 14 is 5 marks)

15

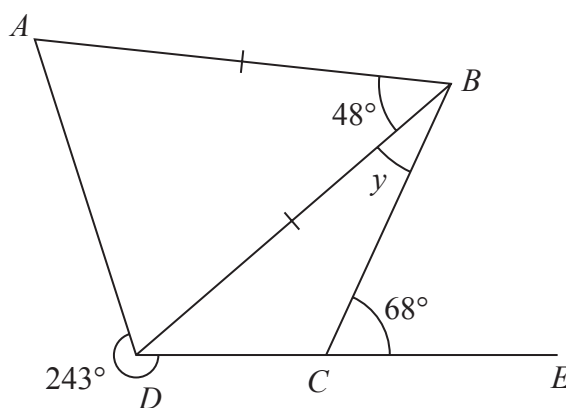


Diagram **NOT**  
accurately drawn

$ABD$  is an isosceles triangle with  $AB = DB$ .

$DCE$  is a straight line.

Angle  $ABD = 48^\circ$

Angle  $BCE = 68^\circ$

Reflex angle  $ADC = 243^\circ$

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

Give a reason for each stage in your working.

(Total for Question 15 is 5 marks)



16

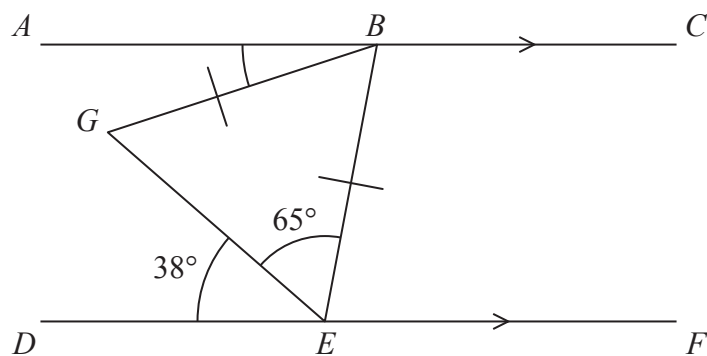


Diagram **NOT**  
accurately drawn

$ABC$  and  $DEF$  are parallel lines.

$BG = BE$

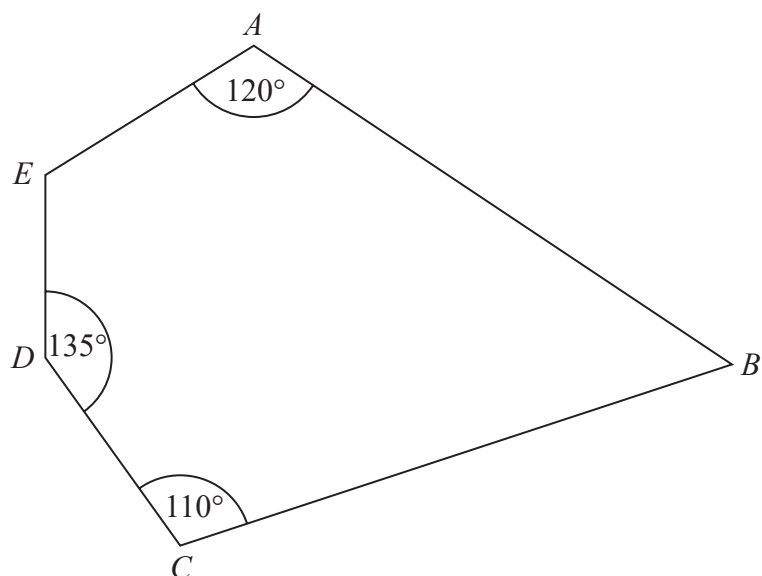
Angle  $DEG = 38^\circ$

Angle  $GEB = 65^\circ$

Find the size of angle  $ABG$ .

(Total for Question 16 is 3 marks)

17 Here is a pentagon.



$$\text{Angle } AED = 4 \times \text{angle } ABC$$

Work out the size of angle  $AED$ .  
You must show all your working.

.....  
(Total for Question 17 is 4 marks)

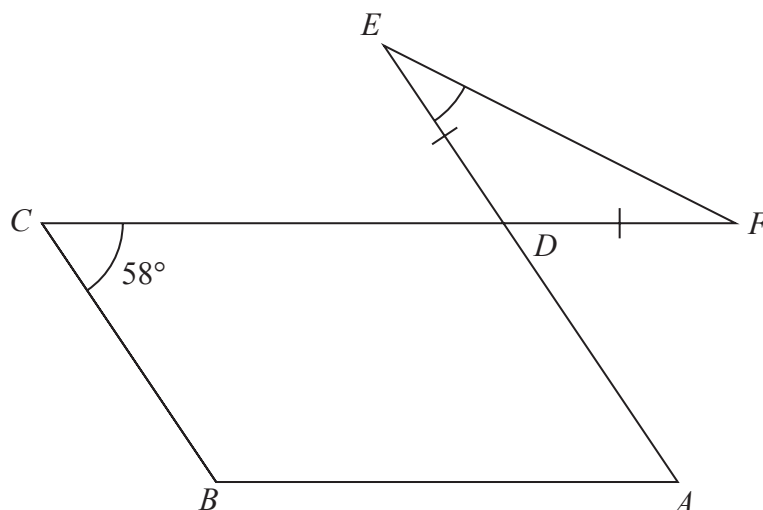


Diagram **NOT**  
accurately drawn

The diagram shows a parallelogram  $ABCD$  and an isosceles triangle  $DEF$  in which  $DE = DF$

$CDF$  and  $ADE$  are straight lines.

Angle  $BCD = 58^\circ$

Work out the size of angle  $DEF$ .

Give a reason for each stage of your working.

**19** The diagram shows a triangle.

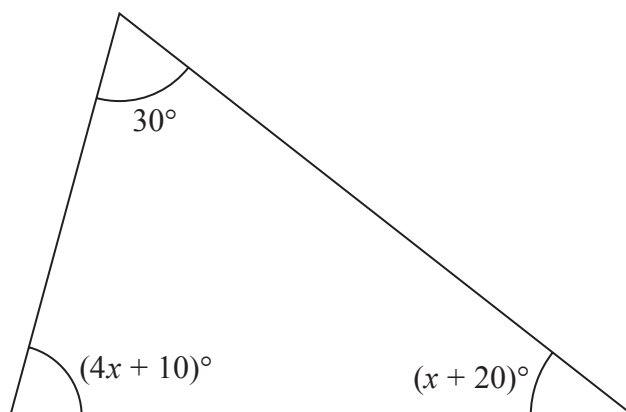


Diagram **NOT**  
accurately drawn

Work out the value of  $x$ .

$x =$  .....

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**(Total for Question 19 is 4 marks)**

20 The diagram shows the triangle  $PQR$ .

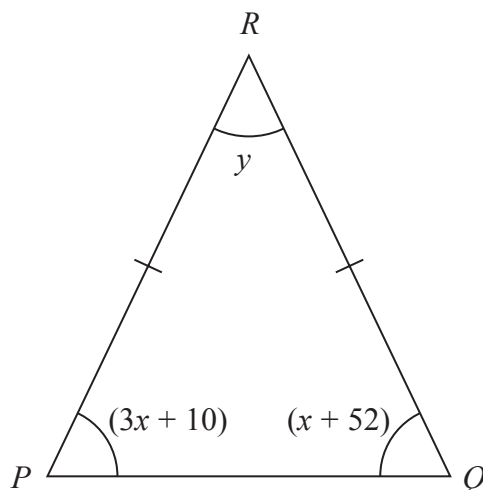


Diagram **NOT**  
accurately drawn

In the diagram, all the angles are in degrees.

$$RP = RQ$$

Find the value of  $y$ .

Show clear algebraic working.

$$y =$$

(Total for Question 20 is 4 marks)

21  $ABCD$  is a trapezium.

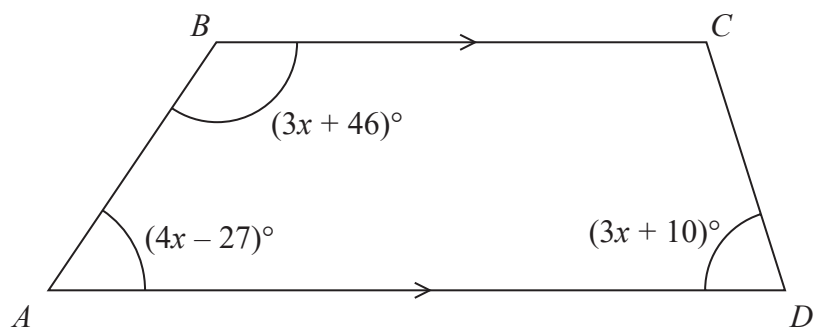


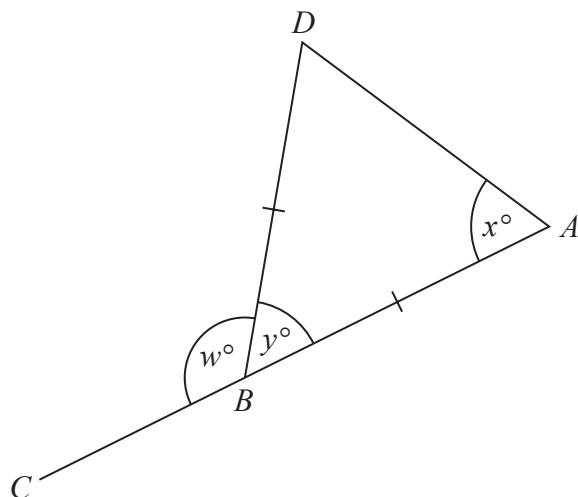
Diagram **NOT**  
accurately drawn

$BC$  is parallel to  $AD$

Find the size of the largest angle inside the trapezium.

.....  
(Total for Question 21 is 4 marks)

- 22 The diagram shows an isosceles triangle  $ABD$  and the straight line  $ABC$ .



$$BA = BD$$

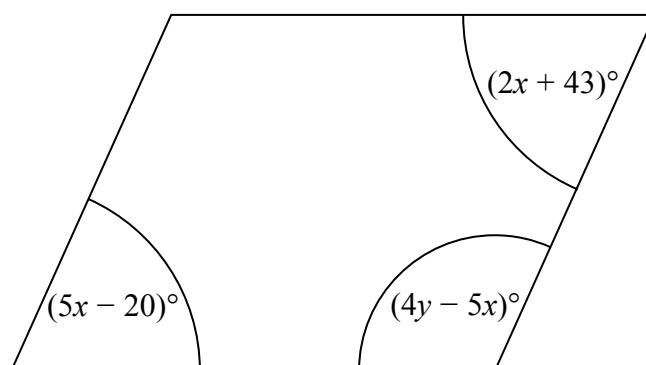
$$x : y = 2 : 1$$

Work out the value of  $w$ .

$$w = \dots\dots\dots$$

(Total for Question 22 is 4 marks)

**23** Here is a parallelogram.



Work out the value of  $x$  and the value of  $y$ .

$x =$  .....

$y =$  .....

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**(Total for Question 23 is 5 marks)**