1 *ABC* is a straight line and *BCD* is a triangle.

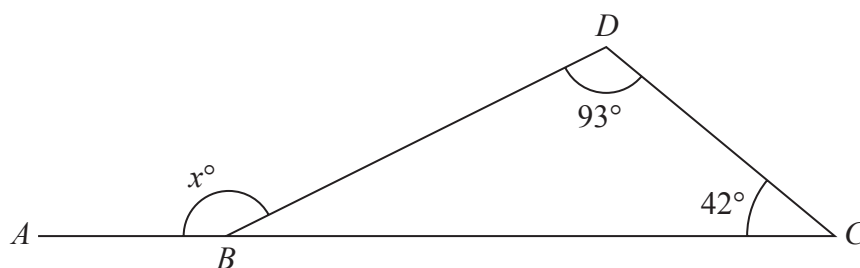Diagram **NOT**
accurately drawn

(a) Work out the value of *x*

$x =$ ....
(2)

PO, *RO*, *SO* and *TO* are four straight lines.
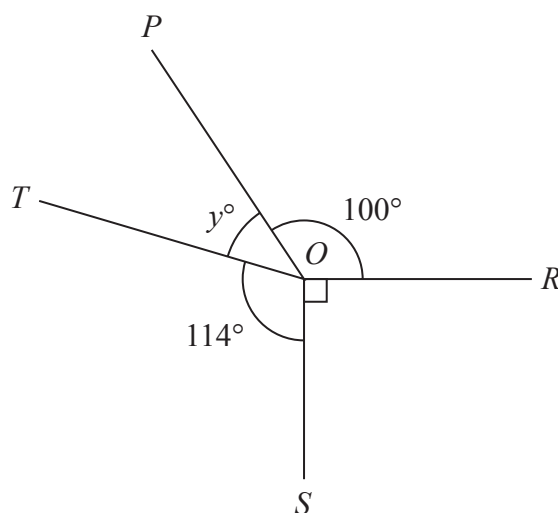
Diagram **NOT**
accurately drawn

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

$y =$ ....
(2)

(ii) Give a reason for your answer.

....
(1)

(Total for Question 1 is 5 marks)

2 The diagram shows triangle *ABD*
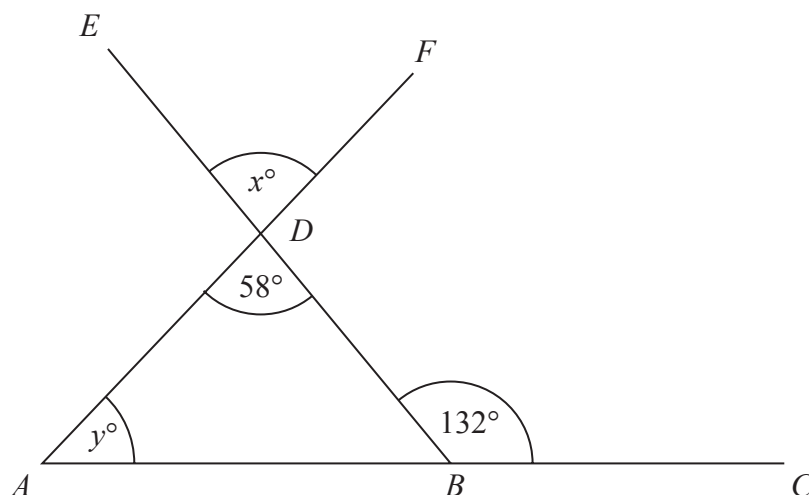

Diagram **NOT** accurately drawn

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

angle *CBD* = 132° angle *ADB* = 58°

(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 = ...

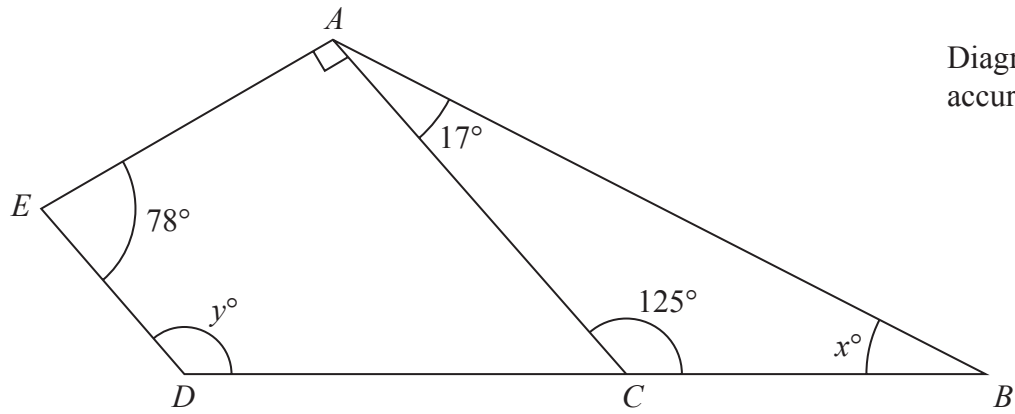**(2)**

(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 = ...

(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 = ...

(3)

(Total for Question 3 is 5 marks)

4
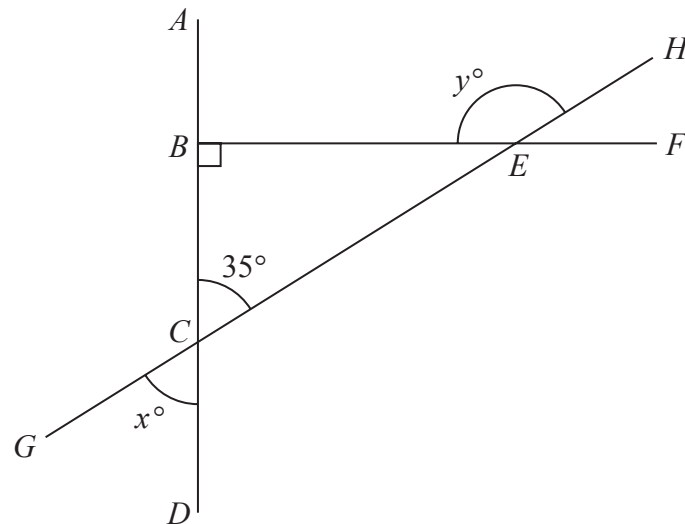

Diagram **NOT** accurately drawn

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

Angle *BCE* = 35°

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

x = ...

(1)

  (ii) Give a reason for your answer.

....

(1)

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

y = ...

(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*
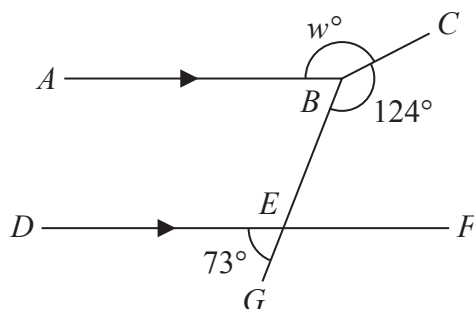
Diagram **NOT** accurately drawn

BEG is a straight line.

angle *DEG* = 73°   angle *EBC* = 124°   angle *ABC* = *w*°

Work out the value of *w*
Give reasons for each stage of your working.

w = ...

(Total for Question 5 is 4 marks)

6
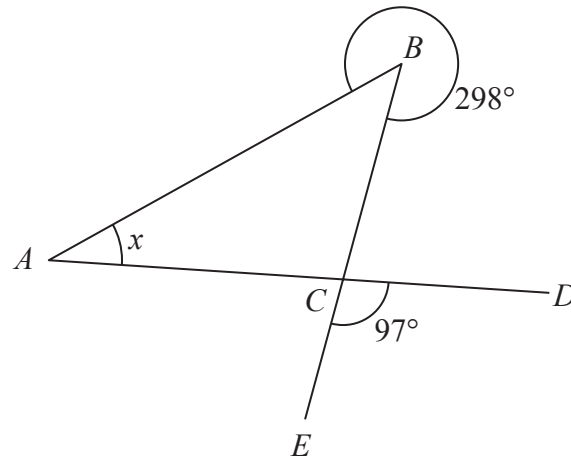
Diagram **NOT** accurately drawn

ABC is a triangle.
D and *E* are points such that *ACD* and *BCE* are straight lines.

reflex angle *ABC* = 298°
angle *ECD* = 97°

Work out the size of angle *x*.
Give a reason for each stage of your working.

$x =$ ....°

(Total for Question 6 is 4 marks)

7
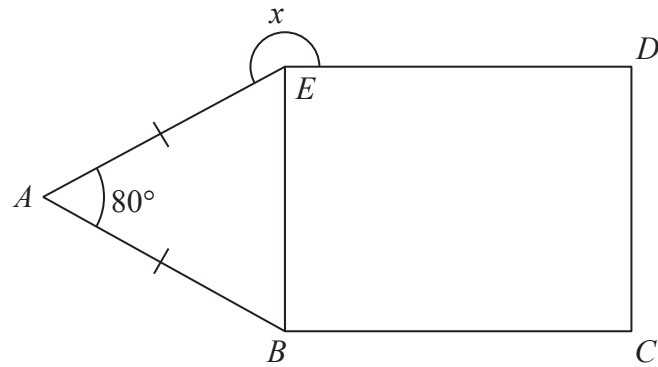
Diagram **NOT**
accurately drawn
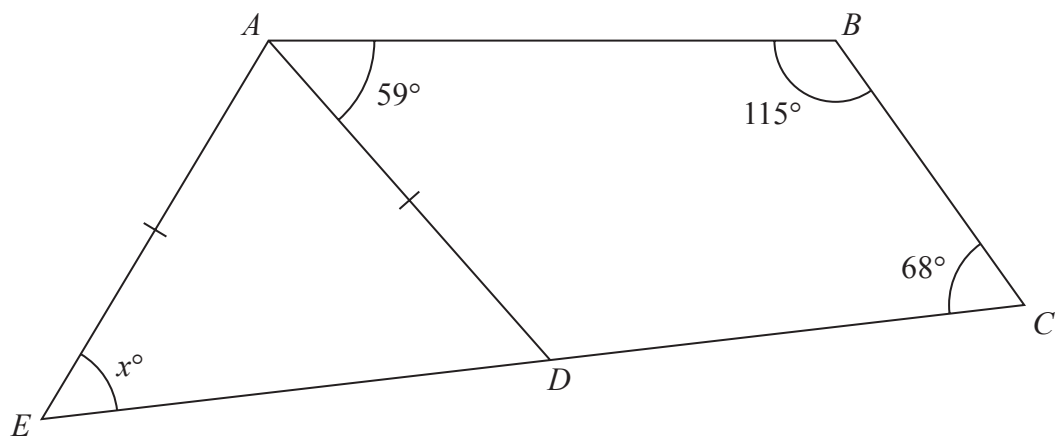
BCDE is a rectangle.
ABE is an isosceles triangle.

AB = *AE*
Angle *BAE* = 80°

Work out the size of angle *x*.

.... °

(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 = ...

(Total for Question 8 is 4 marks)

9   The diagram shows a trapezium *ABCD* in which *AB* and *DC* are parallel.
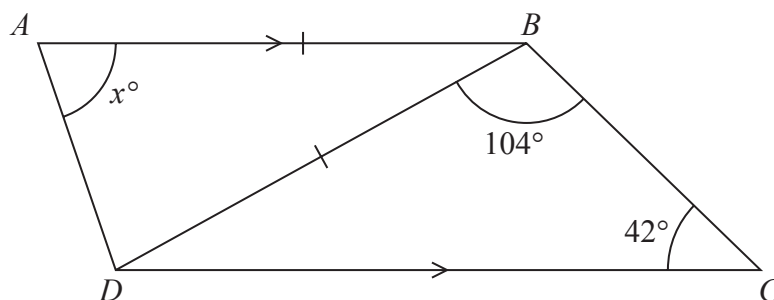
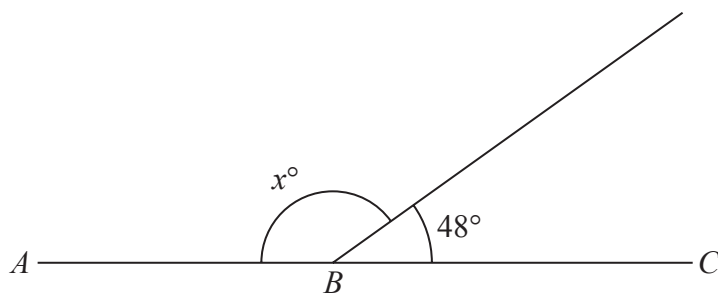Diagram **NOT** accurately drawn

AB = DB

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

$x = $ ....

(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)

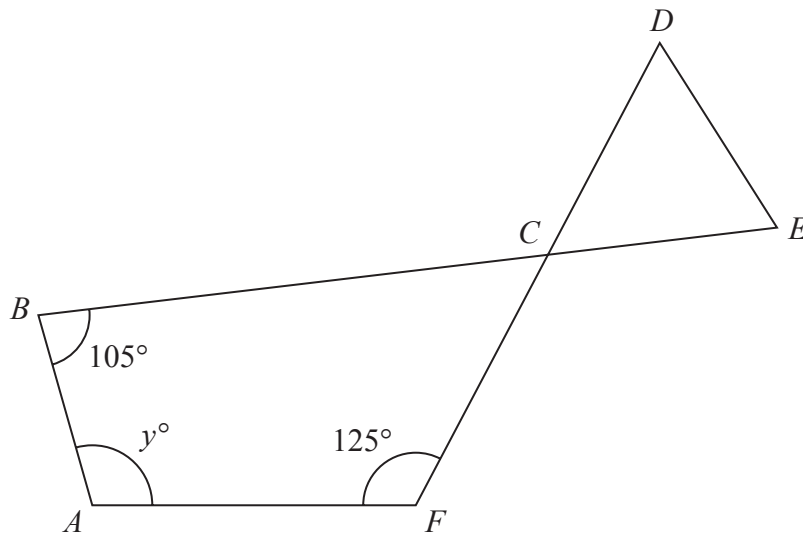..
(1)

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 = ...
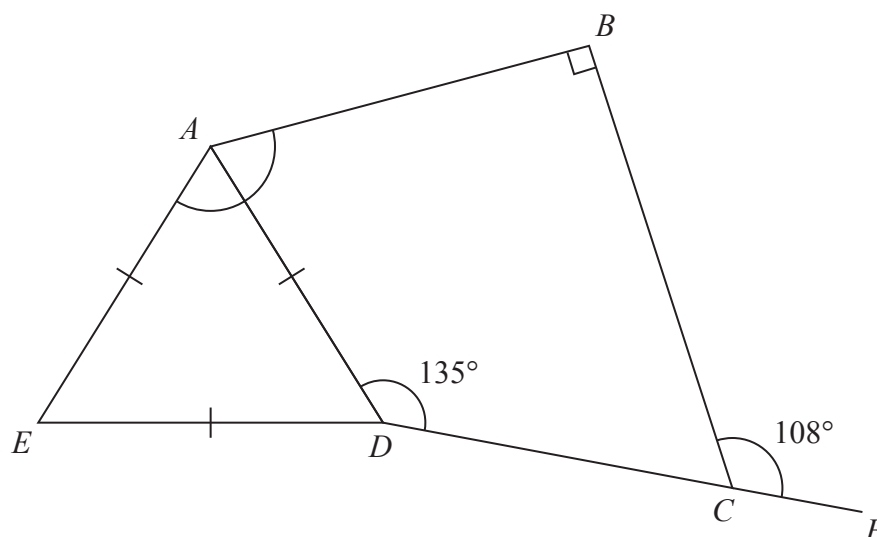
(3)

(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

A

55°

x

D

116°

C

B
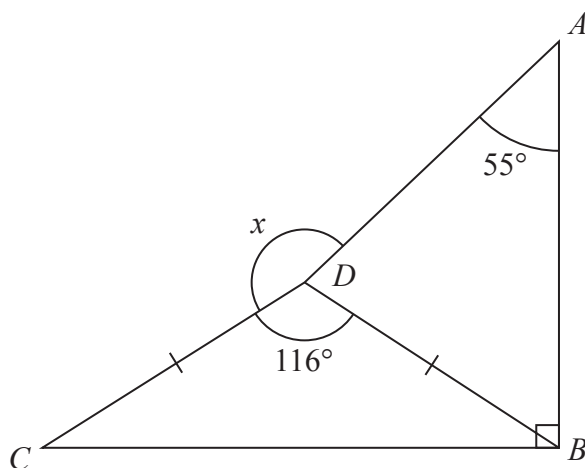
DC = DB
Angle *ABC* = 90°
Angle *CDB* = 116°
Angle *DAB* = 55°

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
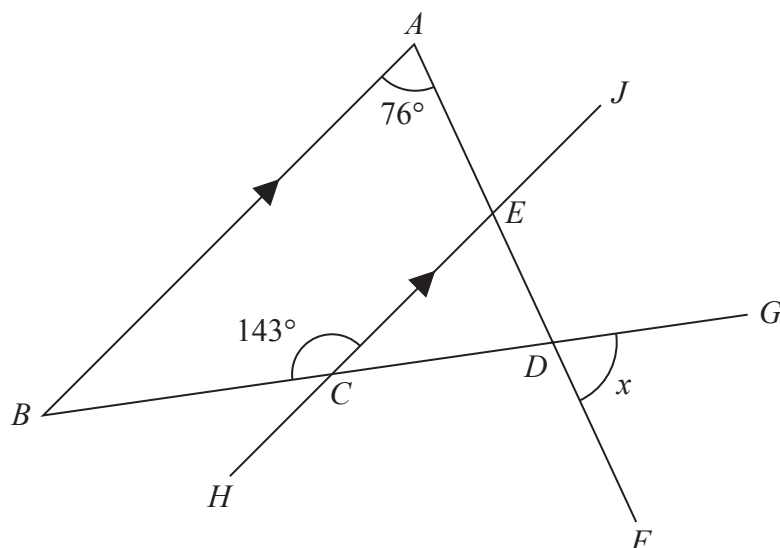
Diagram **NOT**
accurately drawn

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*.

.... °
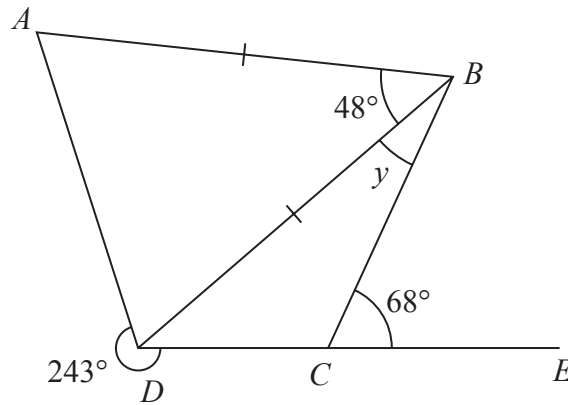
(Total for Question 13 is 3 marks)

14

Diagram **NOT** accurately drawn

ABD is an isosceles triangle with *AB = DB*.
DCE is a straight line.

Angle *ABD* = 48°
Angle *BCE* = 68°
Reflex angle *ADC* = 243°

Work out the size of the angle marked *y*.
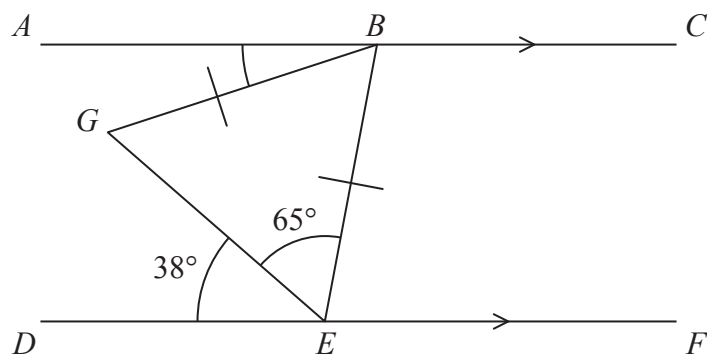Give a reason for each stage in your working.

15

Diagram **NOT** accurately drawn

ABC and *DEF* are parallel lines.

BG = *BE*
Angle *DEG* = 38°
Angle *GEB* = 65°

Find the size of angle *ABG*.

....

(Total for Question 15 is 3 marks)

16 The diagram shows a triangle.

30°

(4x + 10)°

(x + 20)°
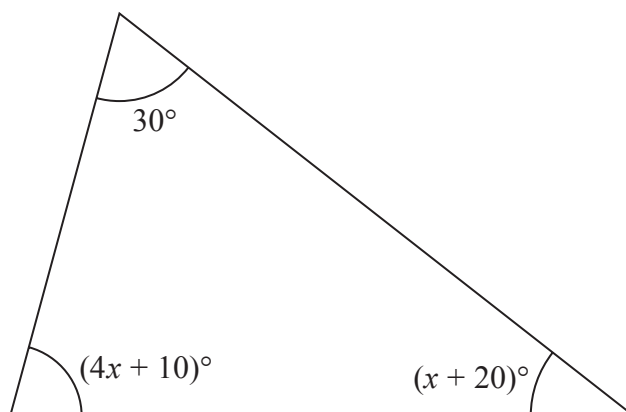
Work out the value of *x*.

x = ...

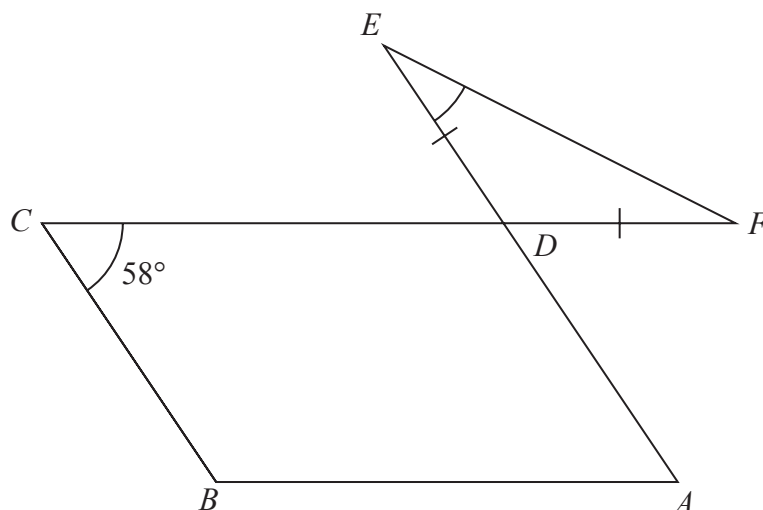**(Total for Question 16 is 4 marks)**

17

Diagram **NOT** accurately drawn

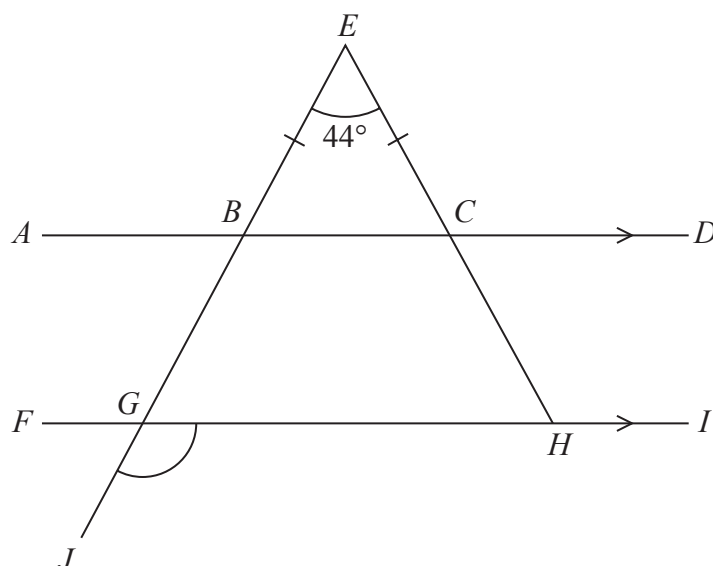The diagram shows a parallelogram *ABCD* and an isosceles triangle *DEF* in which *DE = DF*

CDF and *ADE* are straight lines.
Angle *BCD* = 58°

Work out the size of angle *DEF*.
Give a reason for each stage of your working.

.... °

(Total for Question 17 is 5 marks)

18

Diagram **NOT** accurately drawn

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

BE = CE
Angle *BEC* = 44°

Work out the size of angle *JGH*.
Give a reason for each stage of your working.

.... °

(Total for Question 18 is 5 marks)

19 The diagram shows the triangle *PQR*.

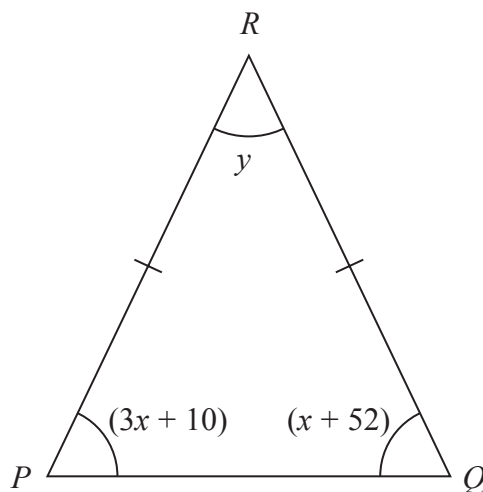
Diagram **NOT** accurately drawn

In the diagram, all the angles are in degrees.

RP = *RQ*

Find the value of *y*.
Show clear algebraic working.

$y = $

(Total for Question 19 is 4 marks)
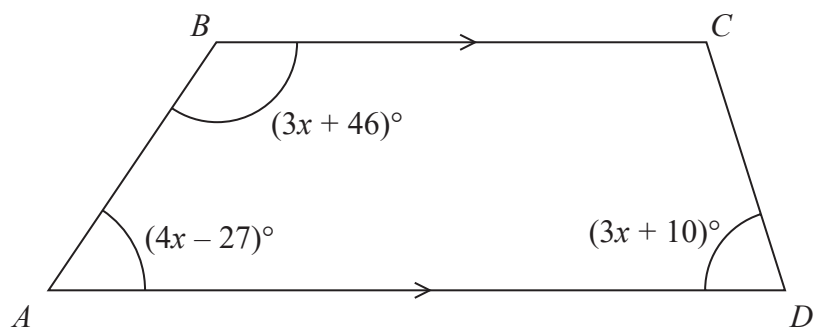
20 *ABCD* is a trapezium.

B

C

Diagram **NOT**
accurately drawn

$(3x + 46)°$

$(4x – 27)°$

$(3x + 10)°$

A

D

BC is parallel to *AD*

Find the size of the largest angle inside the trapezium.

°

....

(Total for Question 20 is 4 marks)