

8300

GCSE MATHEMATICS

Foundation and Higher tier – Questions by Topic

Geometry

Angles – Angles on parallel lines

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

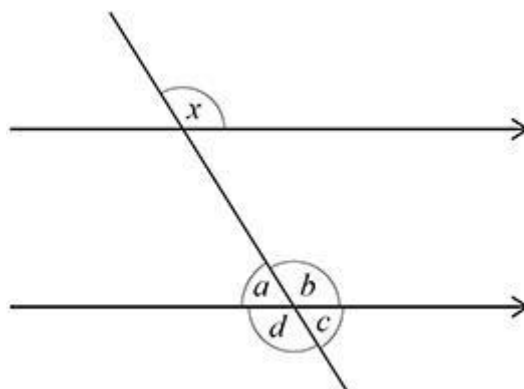
For questions 1 to 3 you must **NOT** use a calculator.



Q1.

A straight line passes through two parallel lines.

Not drawn accurately



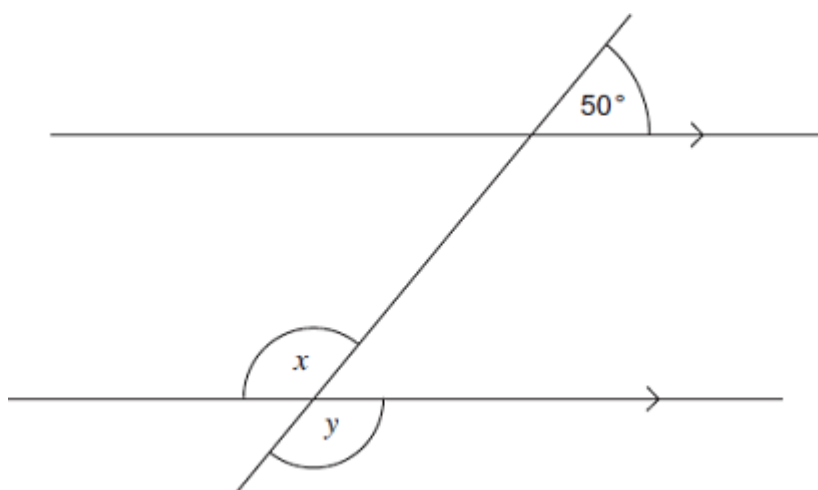
Circle the angle that is **corresponding** to angle x .

a b c d

(Total 1 mark)

Q2.

Not drawn accurately



(a) Work out the size of angle x .

(1)

(b) Which **one** of these describes angles x and y ?
Circle your answer.

alternate angles

corresponding angles

interior angles

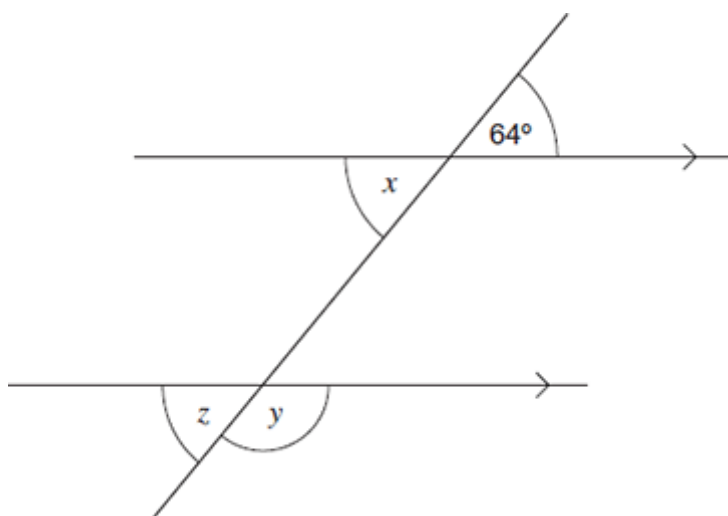
vertically opposite angles

(1)

(Total 2 marks)

Q3.

Not drawn
accurately



(a) Write down the size of angle x .

(1)

(b) Work out the size of angle y .

(1)

(c) Choose the correct word from the list to complete the sentence.

opposite alternate corresponding interior

Angle x and angle z are _____ angles.

(1)

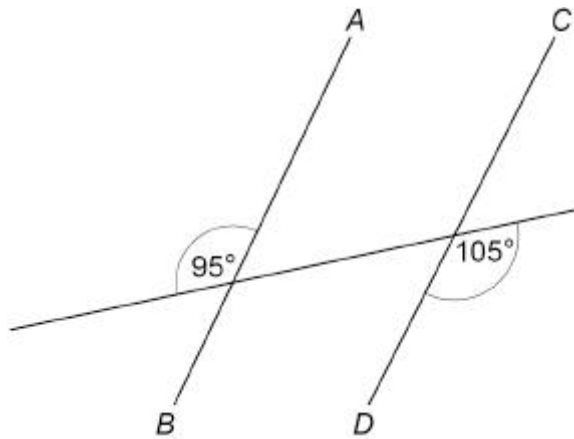
(Total 3 marks)

For questions 4 to 10, you may use a calculator.



Q4.

Here are three straight lines.



Not drawn
accurately

Are the lines AB and CD parallel?

Tick a box.

Yes

☐

No

☐

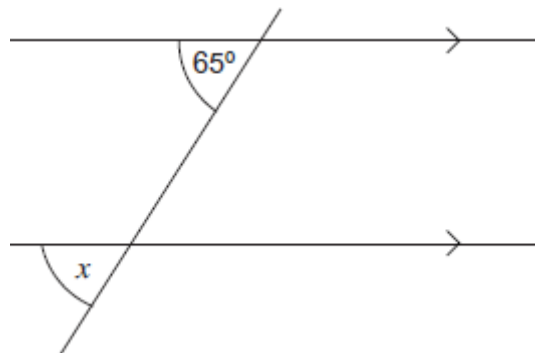
Show working to support your answer.

(Total 2 marks)

Q5.

Write down the size of angle x .

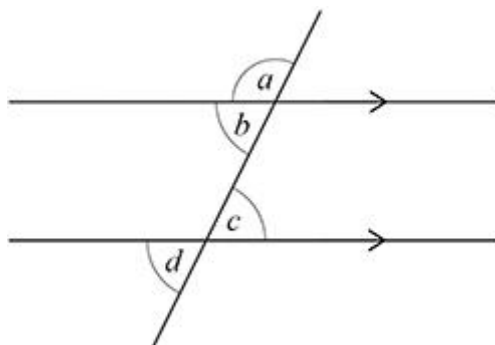
Give a reason for your answer.



Not drawn accurately

(Total 2 marks)

Q6.



Circle the pair of alternate angles.

a and *b*

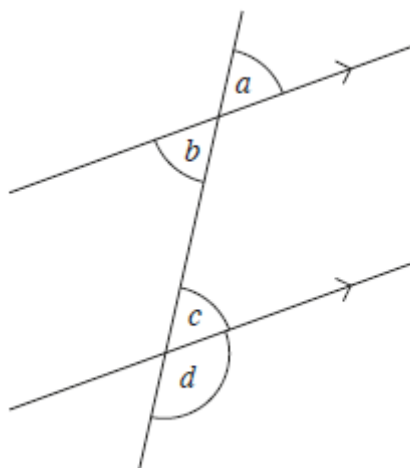
b and *c*

c and *d*

a and *d*

(Total 1 mark)

Q7.



(a) Which angles are vertically opposite?

Circle your answer

a and *b*

a and *c*

b and *c*

b and *d*

c and *d*

(1)

(b) Which angles are alternate?

Circle your answer

a and *b*

a and *c*

b and *c*

b and *d*

c and *d*

(1)

(c) Which angles are corresponding?

Circle your answer

a and *b*

a and *c*

b and *c*

b and *d*

c and *d*

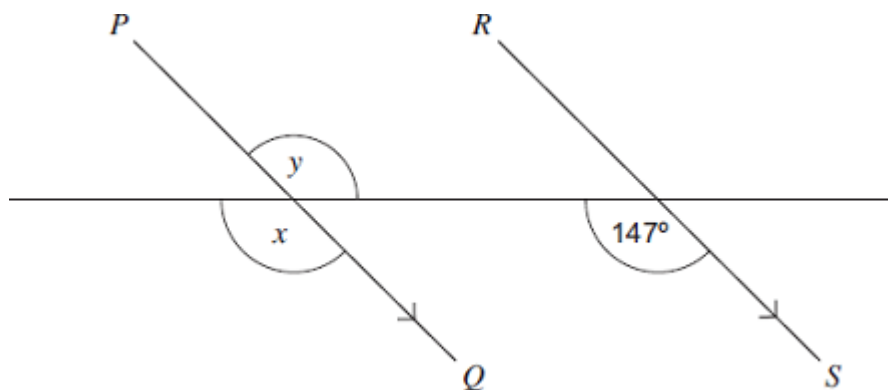
(1)

(Total 3 marks)

Q8.

PQ and RS are parallel.

Not drawn
accurately



- (a) Write down the value of x .
Give a reason for your answer.

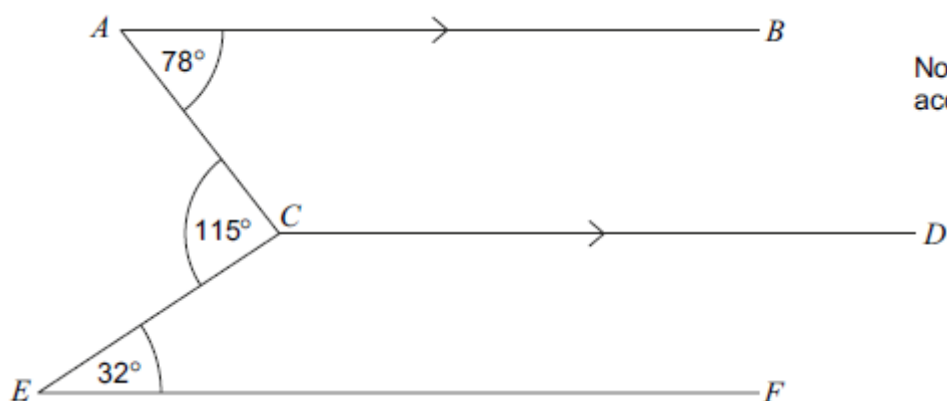
(2)

- (b) Write down the value of y .
Give a reason for your answer.

(2)

(Total 4 marks)

Q9.



Not drawn
accurately

AB is parallel to CD .

Is EF parallel to CD ?

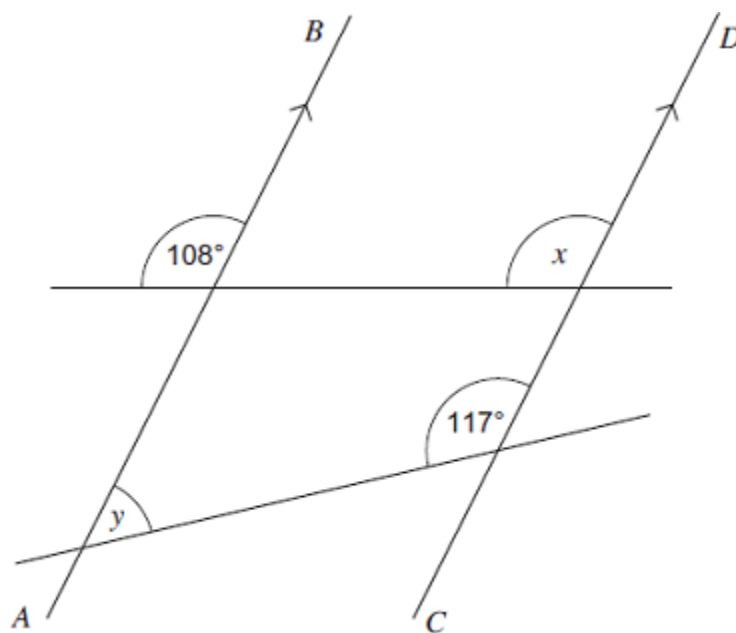
You **must** show your working.

(Total 3 marks)

Q10.

AB is parallel to CD .

Not drawn
accurately



- (a) Write down the size of angle x .
Give a reason for your answer.

(2)

- (b) Work out the size of angle y .

(2)

(Total 4 marks)

Angles – Angles on parallel lines – Cross topic questions.

For question 11 you must **NOT** use a calculator.



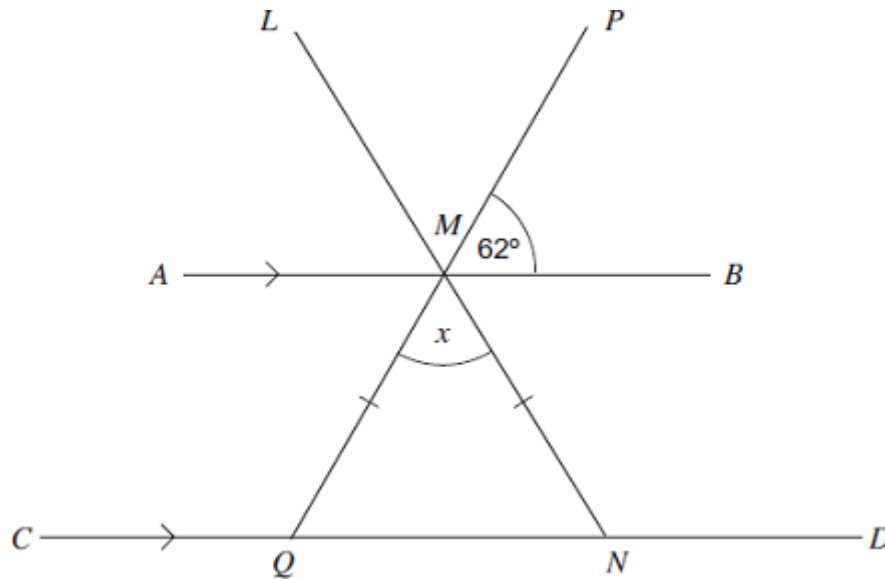
Q11.

AB is parallel to CD .

LMN and PMQ are straight lines.

$MQ = MN$

Not drawn
accurately



Work out the value of x .

(Total 3 marks)

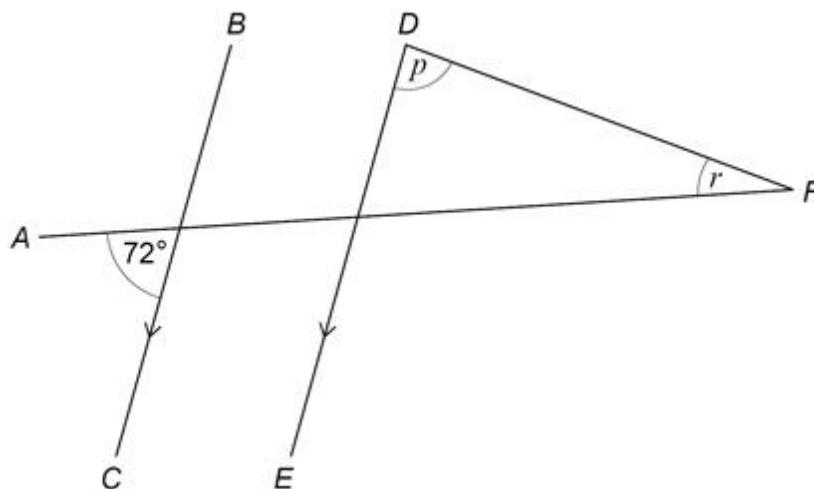
For the remaining questions, you may use a calculator.



Q12.

AF , BC , DE and DF are straight lines.

BC and DE are parallel.



Not drawn
accurately

p is three times r .

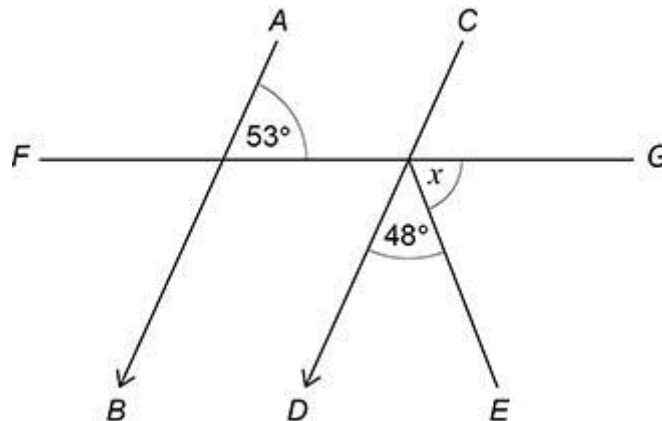
Work out the size of angle p .

(Total 3 marks)

Q13.

AB is parallel to CD .
 FG is a straight line.

Not drawn accurately



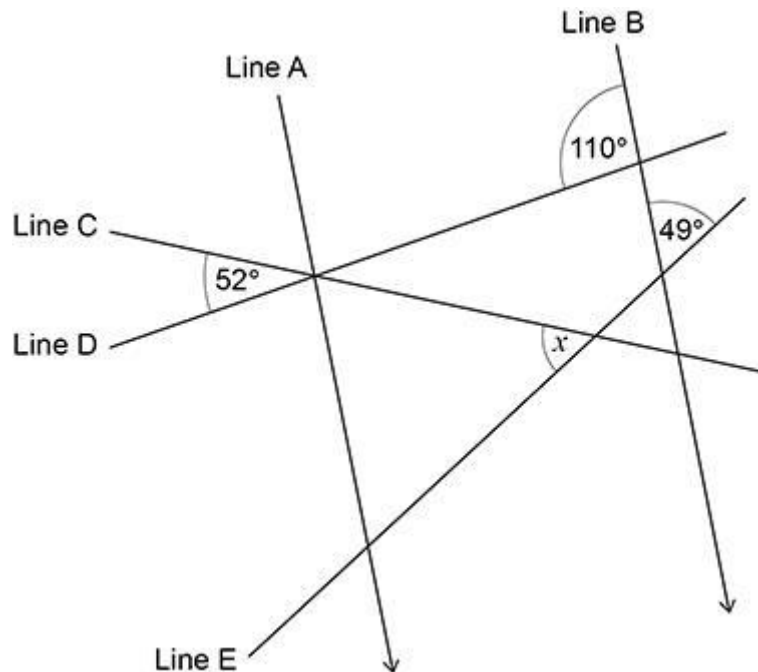
Work out the size of angle x .

(Total 3 marks)

Q14.

Lines A , B , C , D and E intersect as shown.
Lines A and B are parallel.

Not drawn accurately



Work out the size of angle x .

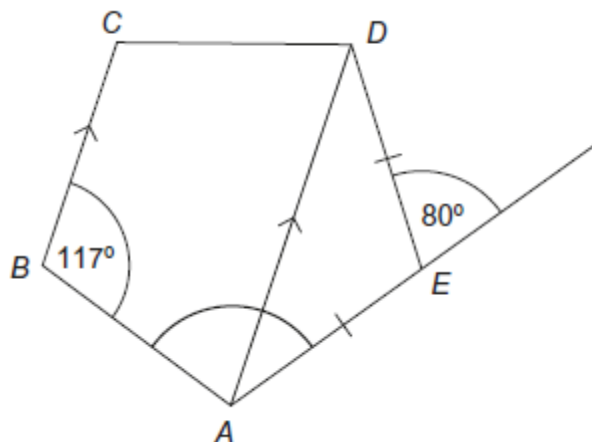
(Total 3 marks)

Q15.

AD is parallel to BC .

$AE = DE$

Not drawn accurately

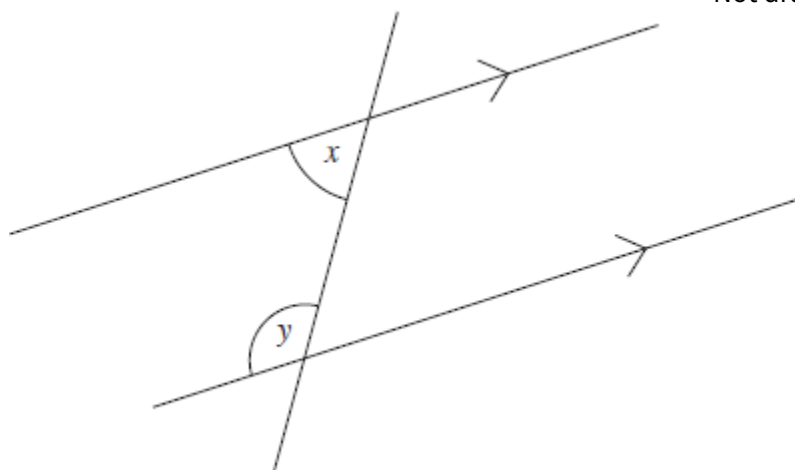


Work out the size of angle BAE .

(Total 3 marks)

Q16.

Not drawn accurately



(a) Use the diagram to write an equation connecting x and y .

(1)

(b) The ratio $x : y = 2 : 3$

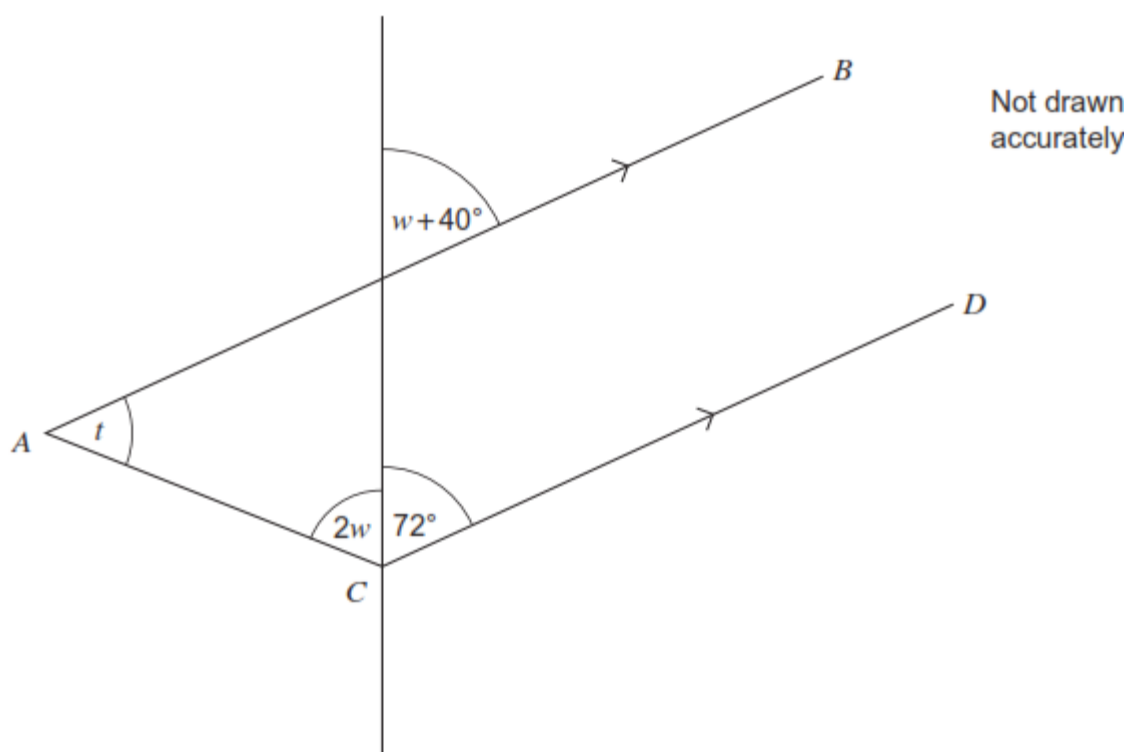
Use this information to write another equation connecting x and y .

(1)

(Total 2 marks)

Q17.

AB is parallel to CD .



Work out the value of t .

(Total 5 marks)

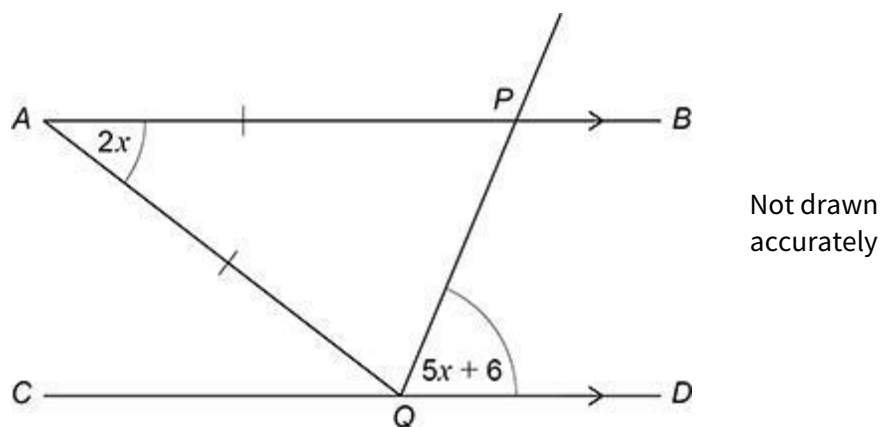
Q18.

AB and CD are straight, parallel lines.

P is a point on AB .

Q is a point on CD .

$AP = AQ$

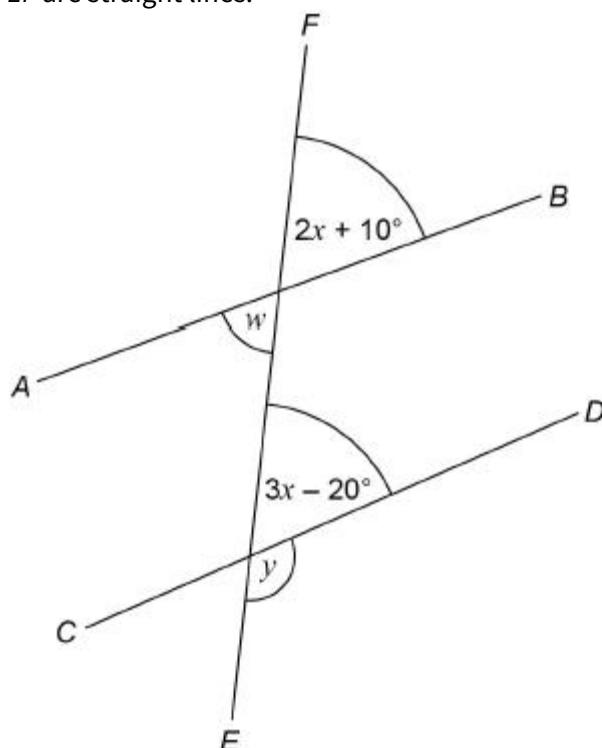


Work out the value of x .

(Total 4 marks)

Q19.

AB , CD and EF are straight lines.



Not drawn
accurately

- (a) Ava assumes that AB and CD are parallel.
What answer should she get for the size of angle y ?

(4)

- (b) In fact,
 AB and CD are **not** parallel
angle w is 60°
What effect does this have on the size of angle y ?
Tick a box.

☐

y is bigger

☐

y is the same

☐

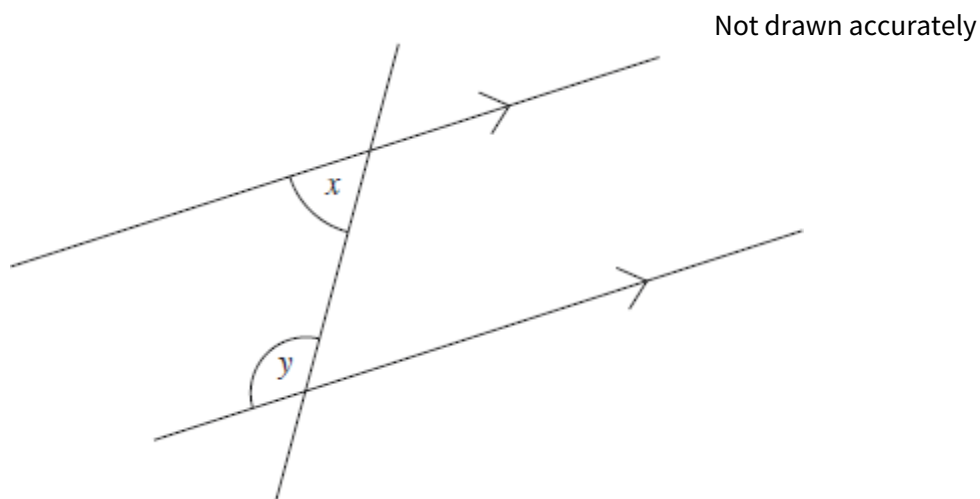
y is smaller

Show working to support your answer.

(3)

(Total 7 marks)

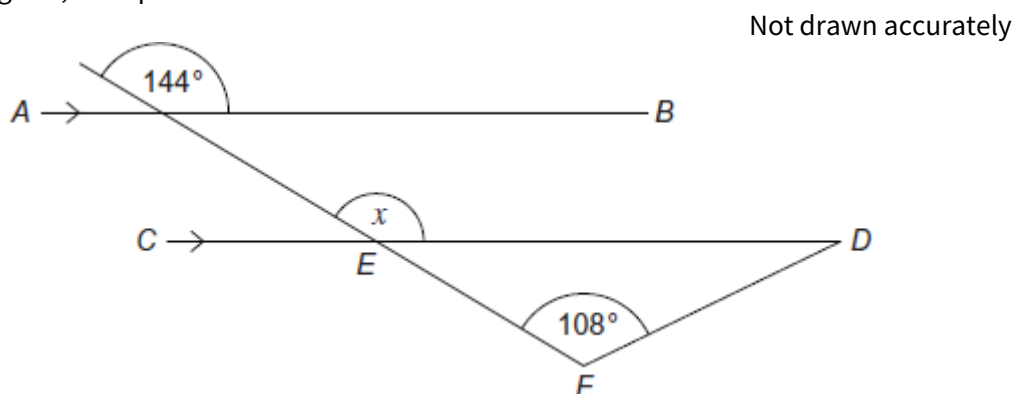
Q20. (H)



- (a) Use the diagram to write an equation connecting x and y . (1)
- (b) The ratio $x : y = 2 : 3$
Use this information to write another equation connecting x and y . (1)
- (c) Work out the size of angles x and y . (3)
- (Total 5 marks)**

Q21. (H)

In this diagram, AB is parallel to CD .



- (a) Tick **one** correct statement for the angles shown on the diagram.

Angle x is equal to 144° because they are alternate angles.

☐

Angle x is equal to 144° because they are vertically opposite angles.

☐

Angle x is equal to 144° because they are corresponding angles.

☐

- (b) Show that triangle EDF is isosceles. You **must** show your working.

(1)

(3)

(Total 4 marks)