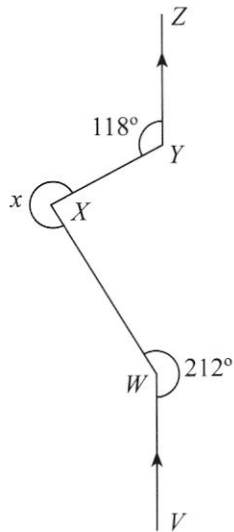


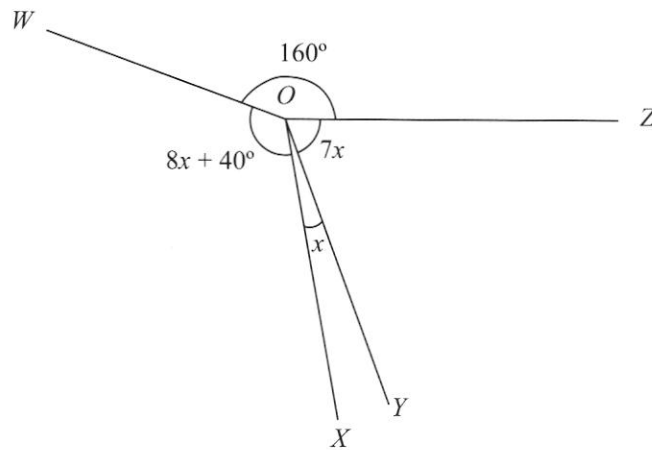
- 4 Given that  $VW$  is parallel to  $YZ$ , find the value of  $x$ .



- 5 Given that angle  $ABC$  is  $43^\circ$ , find
- its complementary angle,
  - its supplementary angle.

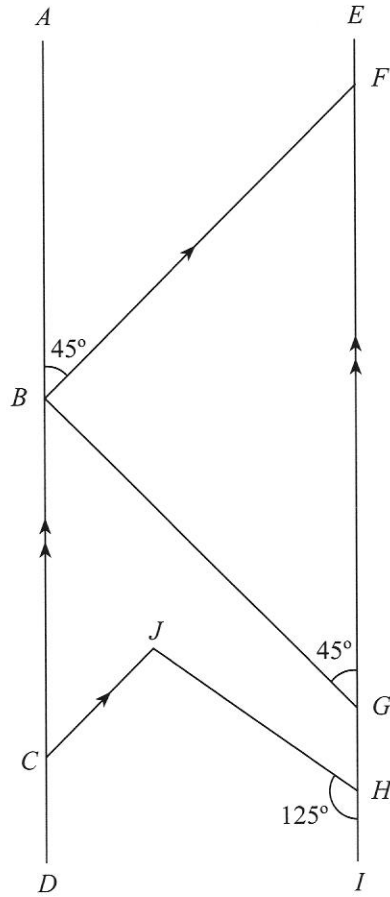
6 Given that  $OW$ ,  $OX$ ,  $OY$  and  $OZ$  are straight lines,

- (a) find the value of  $x$ ,
- (b) state the value of the largest obtuse angle.



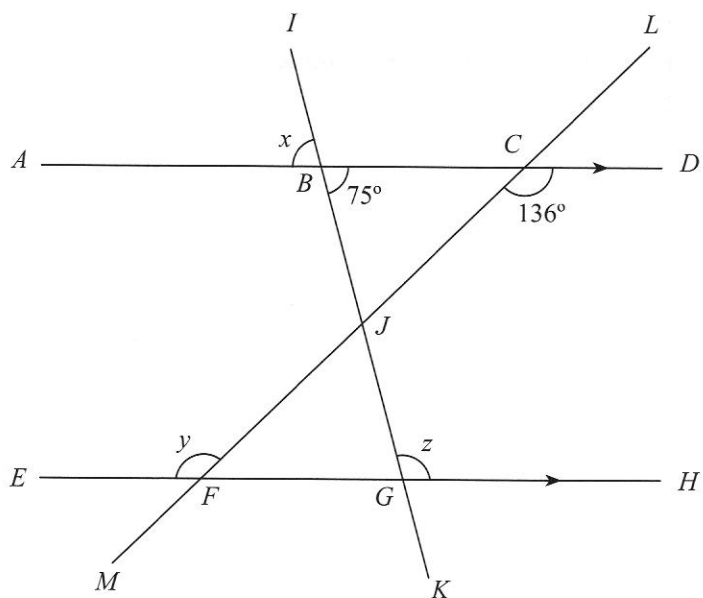
7 In the diagram,  $AD$  is parallel to  $EI$  and  $CJ$  is parallel to  $BF$ .  
 Given that  $\angle ABF = 45^\circ$ ,  $\angle BGF = 45^\circ$  and  $\angle JHI = 125^\circ$ ,

- (a) find  $\angle DCJ$ ,
- (b) find obtuse  $\angle CJH$ ,
- (c) prove that  $\triangle BFG$  is an isosceles triangle, stating your reasons clearly.



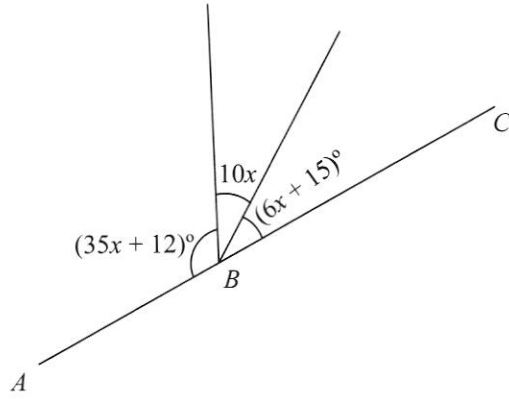
**8** The lines  $AD$  and  $EH$  are parallel.  $\angle DBK = 75^\circ$  and  $\angle DCM = 136^\circ$ .  
Giving your reasons clearly, find the values of

- (a)  $x$ ,
- (b)  $y$ ,
- (c)  $z$ .

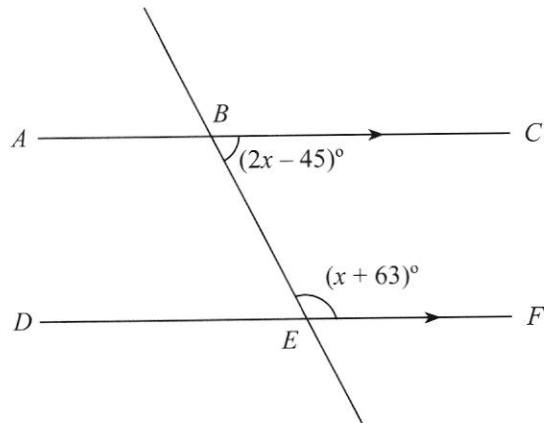


9 Find the value of  $x$  in each figure, stating your reason(s) clearly.

(a)  $ABC$  is a straight line

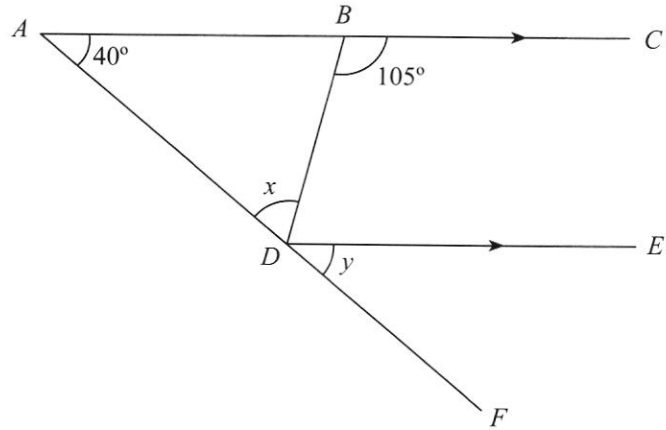


(b)  $AC$  is parallel to  $DF$



- 10** In the diagram,  $AC$  is parallel to  $DE$ ,  $\angle CAF = 40^\circ$  and  $\angle CBD = 105^\circ$ .  
Find the values of

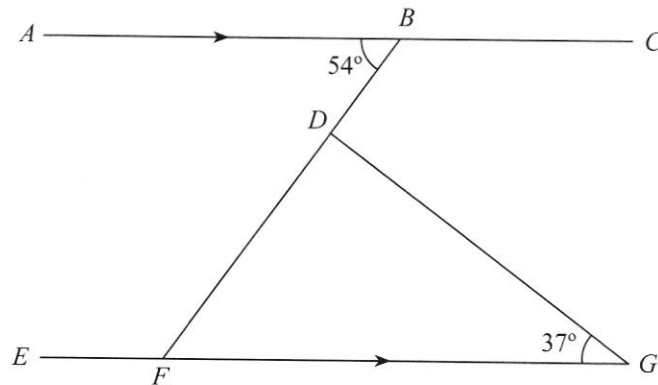
- (a)  $x$ ,  
(b)  $y$ .



- 11** In the diagram, lines  $AC$ ,  $EG$  and  $BF$  are straight lines.  $AC$  is parallel to  $EG$ ,  $\angle ABF = 54^\circ$  and  $\angle DGE = 37^\circ$ .

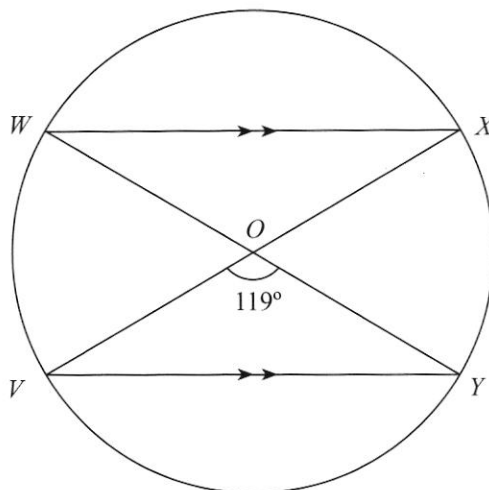
Find

- (a)  $\angle BFE$ ,  
(b) reflex  $\angle BDG$ .

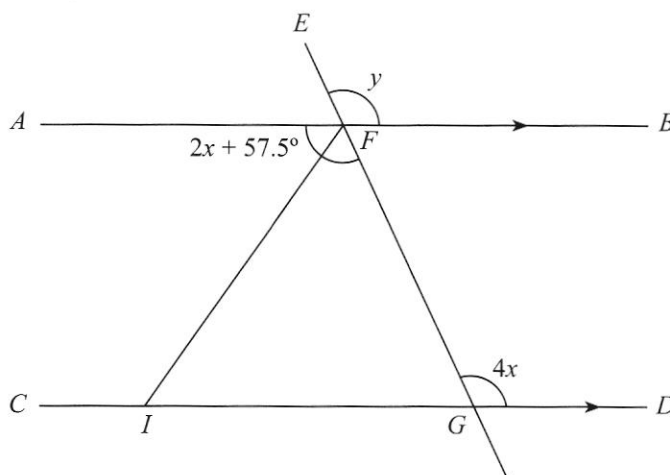


**12** In the diagram,  $O$  is the centre of the circle  $VWXY$  where  $WY$  and  $VX$  are diameters.  $WX$  is parallel to  $VY$  and  $\angle VOY = 119^\circ$ . Stating your reasons clearly, find

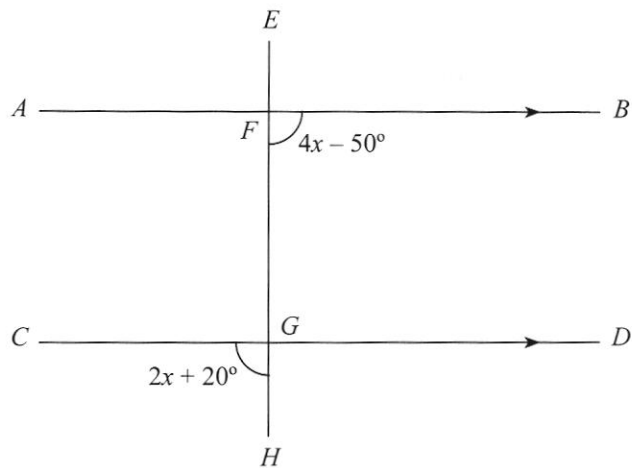
- (a)  $\angle WOV$ ,
- (b)  $\angle WOX$ ,
- (c)  $\angle OWX$ ,
- (d)  $\angle WYV$ .



**13** In the figure shown below,  $AB$ ,  $CD$  and  $EG$  are straight lines.  $\angle AFG = 2x + 57.5^\circ$ ,  $\angle EGD = 4x$  and  $\angle EFB = y$ . Find the values of  $x$  and  $y$ .

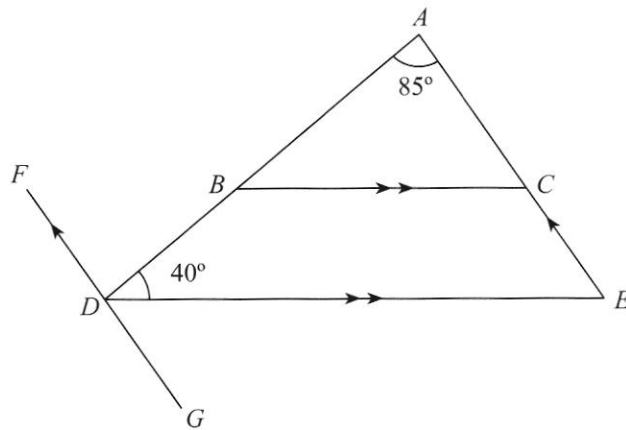


- 14 In the figure,  $EH$  is a straight line,  $AB$  is parallel to  $CD$ ,  $\angle BFH = 4x - 50^\circ$  and  $\angle CGH = 2x + 20^\circ$ . Find the value of  $x$ .



- 15 In the diagram,  $BC$  is parallel to  $DE$  and  $AE$  is parallel to  $FG$ .  $\angle DAE = 85^\circ$  and  $\angle ADE = 40^\circ$ . Stating your reasons clearly, find

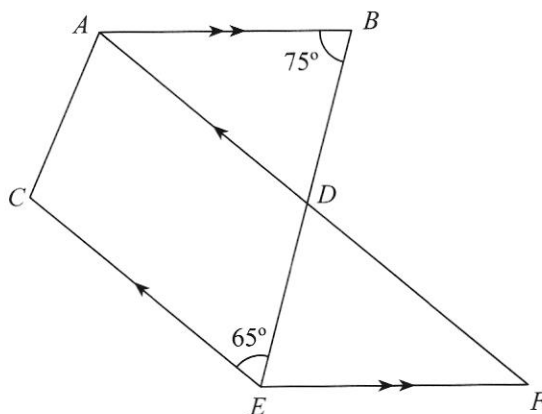
- reflex  $\angle DAE$ ,
- $\angle EDG$ ,
- $\angle ACB$ .





- 16** In the diagram,  $BE$  is a straight line that intersects  $AF$  at  $D$ .  $AB \parallel EF$ ,  $CE \parallel AF$ ,  $\angle ABE = 75^\circ$  and  $\angle CEB = 65^\circ$ . Showing all workings and stating the reasons clearly, find

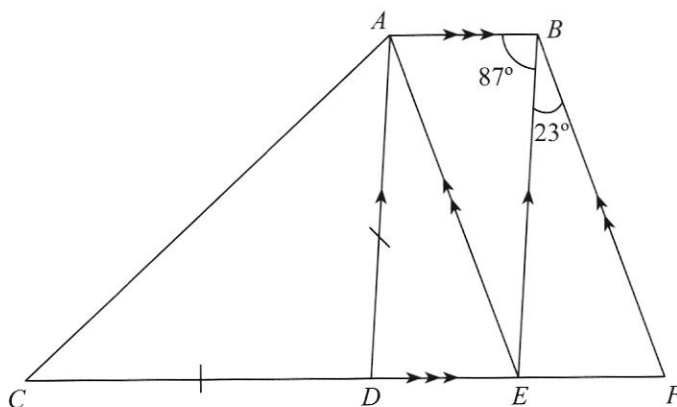
- (a)  $\angle ADE$ ,  
 (b) obtuse  $\angle BDF$ ,  
 (c) reflex  $\angle AFE$ .



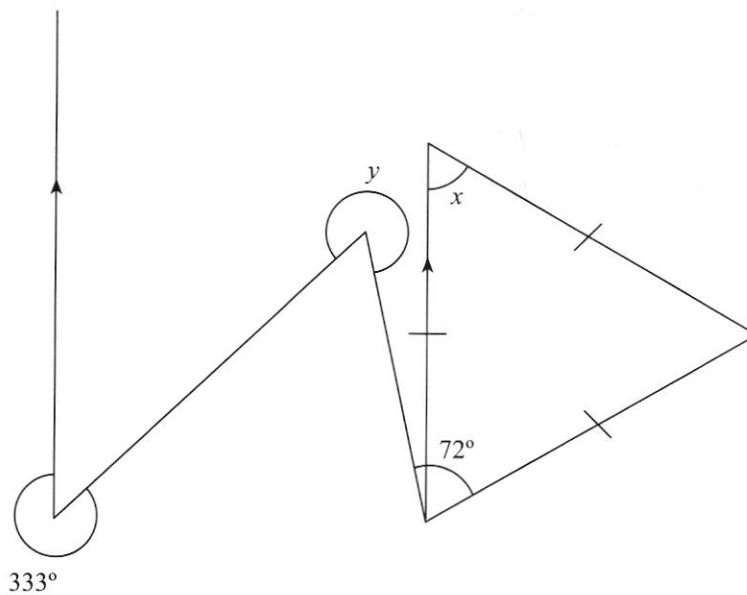
- 17** In the diagram below,  $ABFC$  is a trapezium,  $AD \parallel BE$ ,  $AE \parallel BF$ ,  $AB \parallel CF$ ,  $CD = AD$ ,  $\angle ABE = 87^\circ$  and  $\angle FBE = 23^\circ$ .

Stating clearly all geometric reasons and properties, calculate

- (a)  $\angle ADC$ ,  
 (b)  $\angle CAD$ ,  
 (c)  $\angle CFB$ ,  
 (d) reflex  $\angle CAB$ .

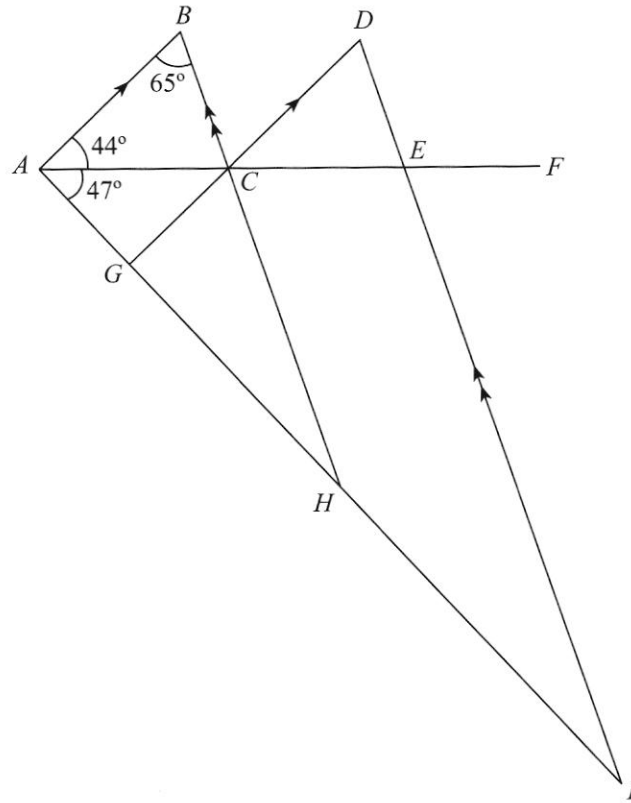


18 Find the values of  $x$  and  $y$  in the diagram below.

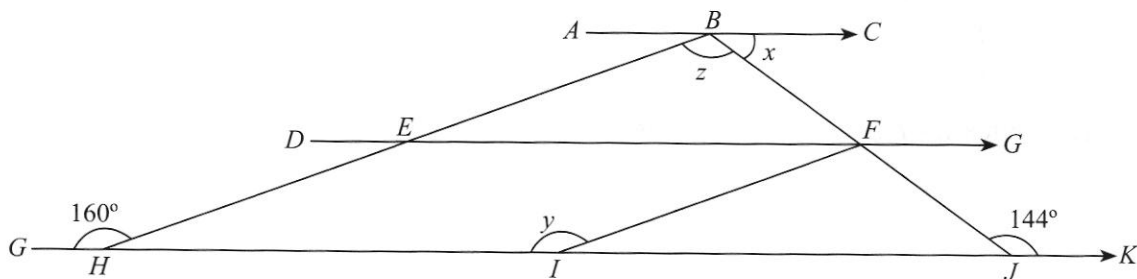


**19** In the diagram below,  $AF$ ,  $AI$ ,  $BH$  and  $DI$  are straight lines,  $\angle BAF = 44^\circ$ ,  $\angle ABH = 65^\circ$  and  $\angle FAI = 47^\circ$ . Find

- $\angle GCH$ ,
- $\angle AID$ ,
- reflex  $\angle CDE$ .



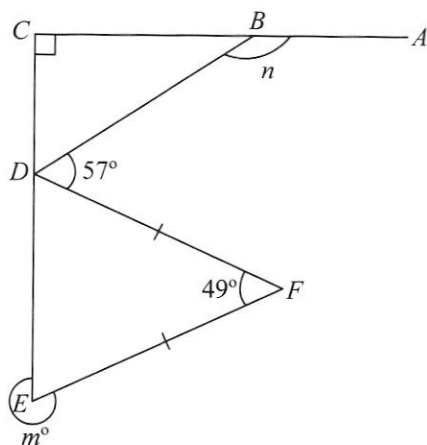
**20** In the figure below,  $AC \parallel DG \parallel GK$ ,  $BH \parallel FI$  and  $BH$  and  $JB$  are straight lines.



By stating all the reasons clearly, find the values of

- (a)  $x$ ,
- (b)  $y$ ,
- (c)  $z$ .

**21** In the diagram,  $\angle ACE$  is a right angle,  $\angle DFE = 49^\circ$ ,  $\angle BDF = 57^\circ$  and  $DF = EF$ .

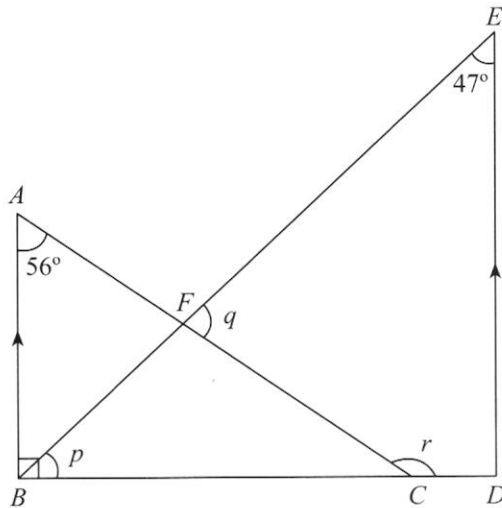


Calculate the values of

- (a)  $m$ ,
- (b)  $n$ .

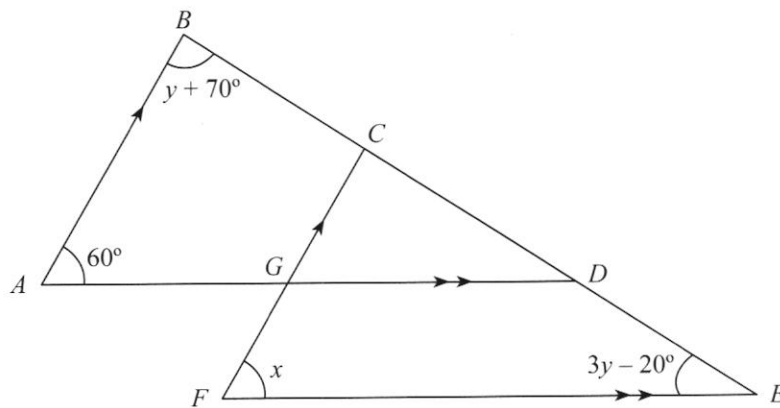
- 22** Given that  $AB$  is parallel to  $ED$ ,  $\angle BAC = 56^\circ$ ,  $\angle BED = 47^\circ$  and  $\angle ABD = 90^\circ$ , find the values of

- (a)  $p$ ,  
 (b)  $q$ ,  
 (c)  $r$ .



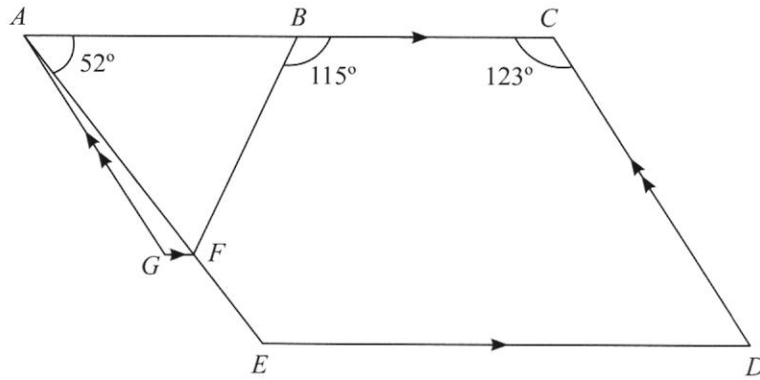
- 23** In the diagram below,  $BCDE$ ,  $AGD$  and  $FGC$  are straight lines,  $\angle BAD = 60^\circ$ ,  $AB \parallel FC$  and  $AD \parallel FE$ .

Find the values of  $x$  and  $y$ , stating the suitable reasons for your workings clearly.



**24** In the diagram below,  $AC$ ,  $GF$  and  $ED$  are parallel,  $AG$  is parallel to  $CD$ ,  $\angle CAE = 52^\circ$ ,  $\angle CBF = 115^\circ$  and  $\angle ACD = 123^\circ$ . Calculate, stating your reasons clearly,

- (a)  $\angle AED$ ,
- (b)  $\angle AFB$ ,
- (c)  $\angle AGF$ .



**25** In the diagram below,  $AC \parallel DF \parallel GI$ ,  $\angle GBC = 107^\circ$  and  $\angle EHI = 130^\circ$ .

Find the values of

- (a)  $x$ ,
- (b)  $y$ .

