

Name: \_\_\_\_\_

Exam Style Questions

## Missing Angles



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

### Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

### Revision for this topic

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

[Video 30 - at a point](#)

[Video 33 - quadrilaterals](#)

[Video 34 - right angle](#)

[Video 35 - straight line](#)

[Video 37 - triangles](#)

[Video 39 - vertically opposite](#)



1.

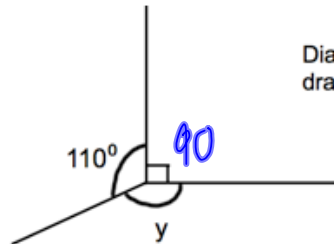


Diagram not drawn accurately

$$\begin{array}{r} 110 \\ + 90 \\ \hline 200 \end{array} \quad \begin{array}{r} 360 \\ - 200 \\ \hline 160 \end{array}$$

- (a) (i) Work out the size of the angle marked  $y$ .

.....<sup>o</sup>  
160

- (ii) Give a reason for your answer.

The angles at a point (full turn) add up to 360 degrees.

.....  
(2)

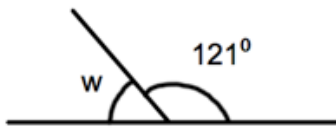


Diagram not drawn accurately

$$\begin{array}{r} 180 \\ - 121 \\ \hline 59 \end{array}$$

- (b) (i) Work out the size of the angle marked  $w$ .

.....<sup>o</sup>  
59

- (ii) Give a reason for your answer.

The angles in a straight line add up to 180 degrees.

.....  
(2)

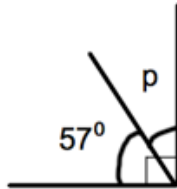


Diagram not drawn accurately

$$\begin{array}{r} 90 \\ - 57 \\ \hline 33 \end{array}$$

- (c) (i) Work out the size of the angle marked p.

$$\dots\dots\dots 33^\circ$$

- (ii) Give a reason for your answer.

The angles in a right angle add up to 90 degrees.

(2)

2. Shown below is a quadrilateral.

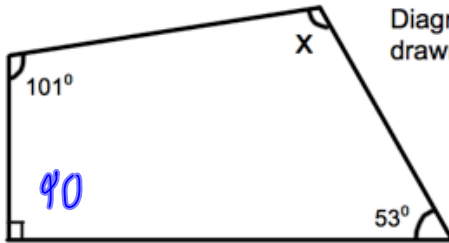


Diagram not drawn accurately

$$\begin{array}{r} 101 \\ 90 \\ \hline 153 \\ 244 \end{array}$$

Work out the size of the angle marked x.

$$\begin{array}{r} 360 \\ - 244 \\ \hline 116 \end{array}$$

$$\dots\dots\dots 116^\circ$$

(2)

3. Shown is a right angled triangle.

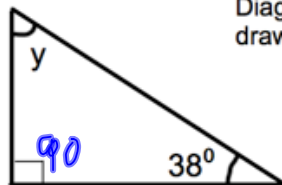


Diagram not drawn accurately

$$\begin{array}{r} 90 \\ + 38 \\ \hline 128 \end{array}$$

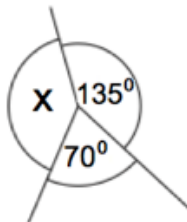
Work out the size of angle y.

$$\begin{array}{r} 71 \\ 180 \\ - 128 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 52 \\ \hline \end{array}^{\circ}$$

(2)

4.



Not drawn accurately

(a) Work out the size of the angle marked x.

$$\begin{array}{r} 135 \\ + 70 \\ \hline 205 \end{array} \quad \begin{array}{r} 51 \\ 360 \\ - 205 \\ \hline 155 \end{array}$$

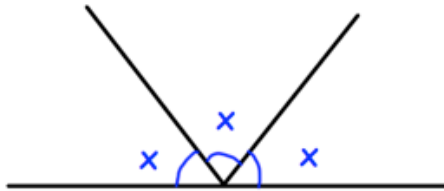
$$\begin{array}{r} 155 \\ \hline \end{array}^{\circ}$$

(b) Give a reason for your answer.

The angles at a point (full turn) add up to 360 degrees.

(2)

5.



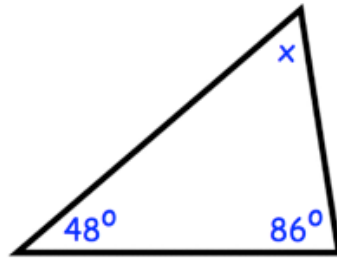
Work out the size of x.

$$180 \div 3 = 60$$

$$\begin{array}{r} 60 \\ \hline \end{array} \text{ } ^\circ$$

(2)

6.



Work out the size of angle x.

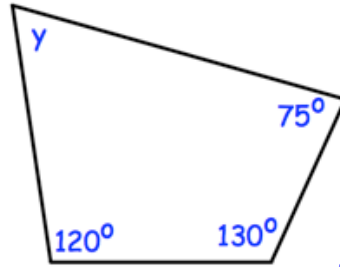
$$\begin{array}{r} 86 \\ +48 \\ \hline 134 \end{array}$$

$$\begin{array}{r} 71 \\ 180 \\ -134 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 46 \\ \hline \end{array} \text{ } ^\circ$$

(2)

7. Shown below is a quadrilateral.



Work out the size of angle  $y$ .

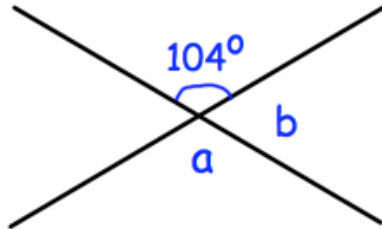
$$\begin{array}{r} 130 \\ 120 \\ \hline 250 \\ 175 \\ \hline 425 \end{array}$$

$$\begin{array}{r} 360 \\ - 325 \\ \hline 35 \end{array}$$

$$\underline{\hspace{1cm}} 35^\circ$$

(2)

8.



(a) Work out the size of angle  $a$ .

$$\underline{\hspace{1cm}} 104^\circ$$

(1)

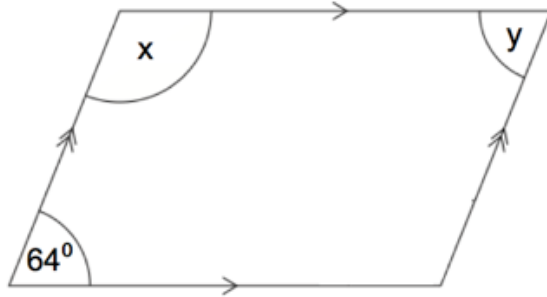
(b) Work out the size of angle  $b$ .

$$\begin{array}{r} 180 \\ - 104 \\ \hline 76 \end{array}$$

$$\underline{\hspace{1cm}} 76^\circ$$

(1)

9.



The diagram above shows a parallelogram.

$$180 - 64 = 116^\circ$$

(a) Work out the size of the angle marked x.

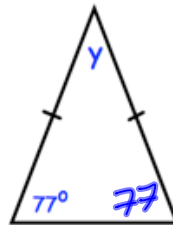
$$116^\circ$$

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

$$64^\circ$$

(2)

10. Shown below is an isosceles triangle.



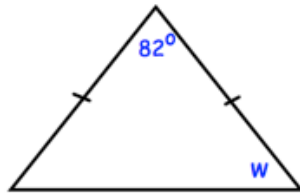
$$\begin{array}{r} 77 \\ 77 \\ \hline 154 \end{array} \quad \begin{array}{r} 7 \\ 180 \\ 154 \\ \hline 26 \end{array}$$

Work out the size of the angle marked y.

$$26^\circ$$

(2)

11. Shown below is an isosceles triangle.



$$\begin{array}{r} 71 \\ 180 \\ - 82 \\ \hline 98 \end{array}$$

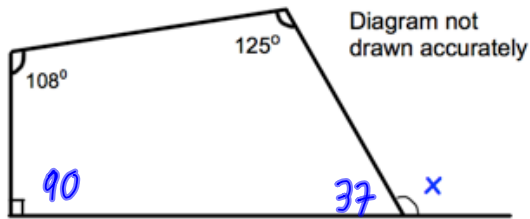
Work out the size of the angle marked w.

$$98 \div 2 = 49$$

$$\underline{\hspace{1cm}} 49^\circ$$

(2)

- 12.



Work out the size of the angle marked x.

$$\begin{array}{r} 108 \\ 125 \\ 90 \\ \hline 323 \end{array}$$

$$\begin{array}{r} 71 \\ 380 \\ - 323 \\ \hline 57 \end{array}$$

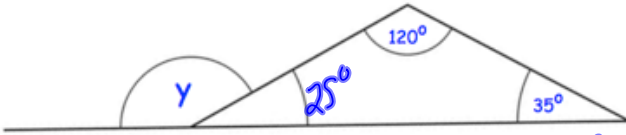
$$\begin{array}{r} 71 \\ 180 \\ - 37 \\ \hline 143 \end{array}$$

$$\underline{\hspace{1cm}} 143^\circ$$

(3)



13.

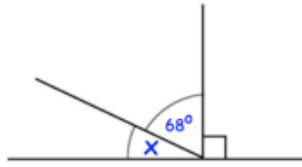


Work out the size of angle  $y$ .

$$\begin{array}{r}
 120 \\
 + 35 \\
 \hline
 155 \\
 \hline
 180 \\
 - 155 \\
 \hline
 25 \\
 \hline
 180 \\
 - 25 \\
 \hline
 155
 \end{array}$$

$\underline{\hspace{1cm}} \dots \dots \dots ^\circ$   
 (3)

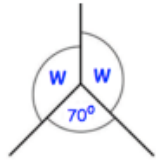
14.



(a) Calculate angle  $x$ .

$$\begin{array}{r}
 90 \\
 - 68 \\
 \hline
 22
 \end{array}$$

$\underline{\hspace{1cm}} \dots \dots \dots ^\circ$   
 (1)



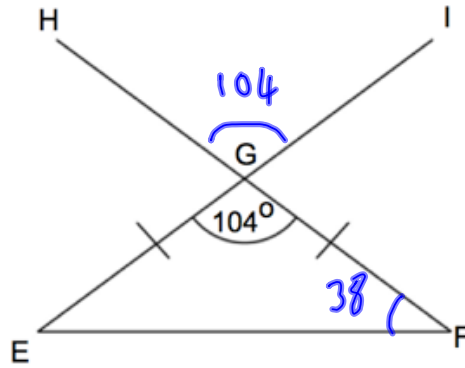
(b) Calculate angle  $w$ .

$$\begin{array}{r}
 360 \\
 - 70 \\
 \hline
 290
 \end{array}$$

$290 \div 2 = 145$

$\underline{\hspace{1cm}} \dots \dots \dots ^\circ$   
 (1)

15.



Triangle EFG is an isosceles triangle.  
Lines FGH and EGI are straight lines.  
Angle EGF is  $104^\circ$ .

(a) Find the size of angle HGI.

$$\begin{array}{r} 104 \\ \hline \end{array}^\circ$$

(1)

(b) Find the size of angle EFG.

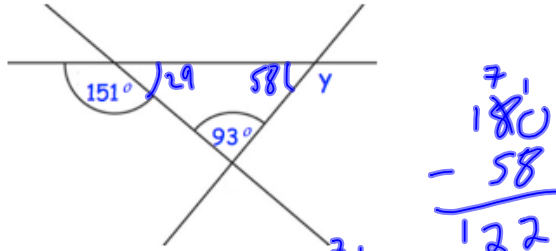
$$\begin{array}{r} 180 \\ -104 \\ \hline 76 \end{array}$$

$$76 \div 2 = 38$$

$$\begin{array}{r} 38 \\ \hline \end{array}^\circ$$

(2)

16. Below are 3 straight lines.



Find the size of angle  $y$ .

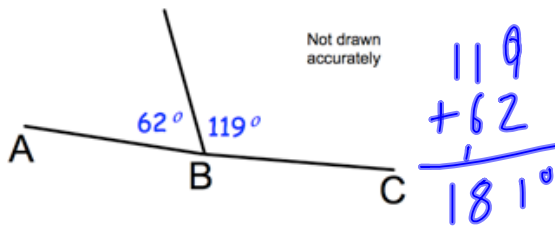
$$\begin{array}{r} 93 \\ + 29 \\ \hline 122 \end{array} \quad \begin{array}{r} 180 \\ - 122 \\ \hline 58 \end{array}$$

$$\begin{array}{r} 71 \\ 180 \\ - 58 \\ \hline 122 \end{array}$$

$$\underline{122^\circ}$$

(3)

17. Bernard says AC is a straight line.



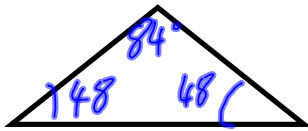
Is he correct?  
Explain your answer.

No, he is incorrect. The angles in a straight line should add up to 180 degrees but the two angles add up to 181 degrees

(2)

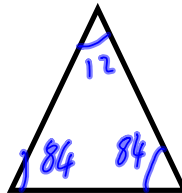
18. An isosceles triangle has one angle of  $84^\circ$ .

Write down the possible sizes of the other two angles in the triangle.



$$180 - 84 = 96$$

$$96 \div 2 = 48$$



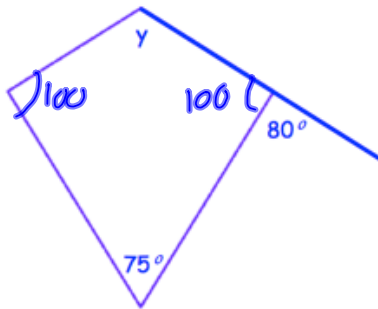
$$84 + 84 = 168$$

$$180 - 168 = 12$$

Pair 1 .....  $48$  ..... and .....  $48$  ..... degrees

Pair 2 .....  $84$  ..... and .....  $12$  ..... degrees  
(3)

19. Below is a kite.



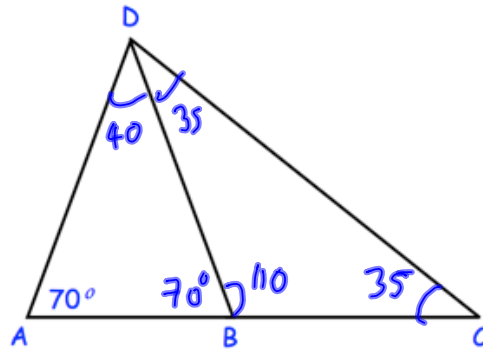
Calculate the size of angle  $y$ .

$$100 + 100 + 75 = 275$$

$$\begin{array}{r} 360 \\ - 275 \\ \hline 85 \end{array}$$

.....  $85^\circ$  .....  
(3)

29.



Triangles ABD and BCD are both isosceles.  
AC is a straight line.

Is ADC a right angle?  
Clearly explain your answer.

Angle ABD =  $70^\circ$  as ABD is an isosceles triangle.  
Angle ADB =  $40^\circ$  as the angles in ABD add to  $180^\circ$   
Angle CBD =  $110^\circ$  as the angles in a straight line add up to 180  
(angle ABD =  $70^\circ$ )  
Angle BDC =  $35^\circ$  as triangle BCD is isosceles.  
Therefore angle ADC is  $75^\circ$  as angle ADB =  $40^\circ$  and BDC =  $35^\circ$   
No it is not a right angle.

(4)

21.

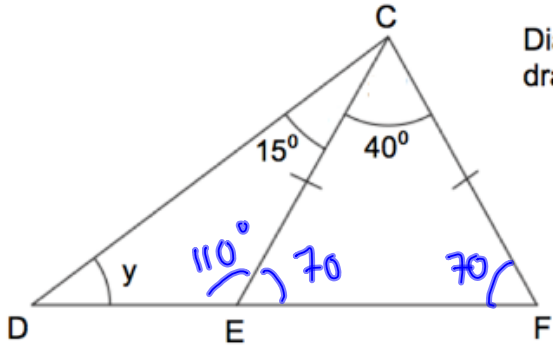


Diagram not drawn accurately

$$\begin{array}{r} 180 \\ - 40 \\ \hline 140 \end{array} \quad 140 \div 2 = 70$$

$$180 - 70 = 110.$$

DEF is a straight line.  
 CE = CF.  
 Angle ECF is  $40^\circ$ .  
 Angle DCE is  $15^\circ$ .

Find the size of the angle marked y.

$$\begin{array}{r} 110^\circ \\ + 15 \\ \hline 125 \end{array} \quad \begin{array}{r} 180 \\ - 125 \\ \hline 55^\circ \end{array}$$

$$\begin{array}{r} 55 \\ \hline \end{array}^\circ$$

(4)