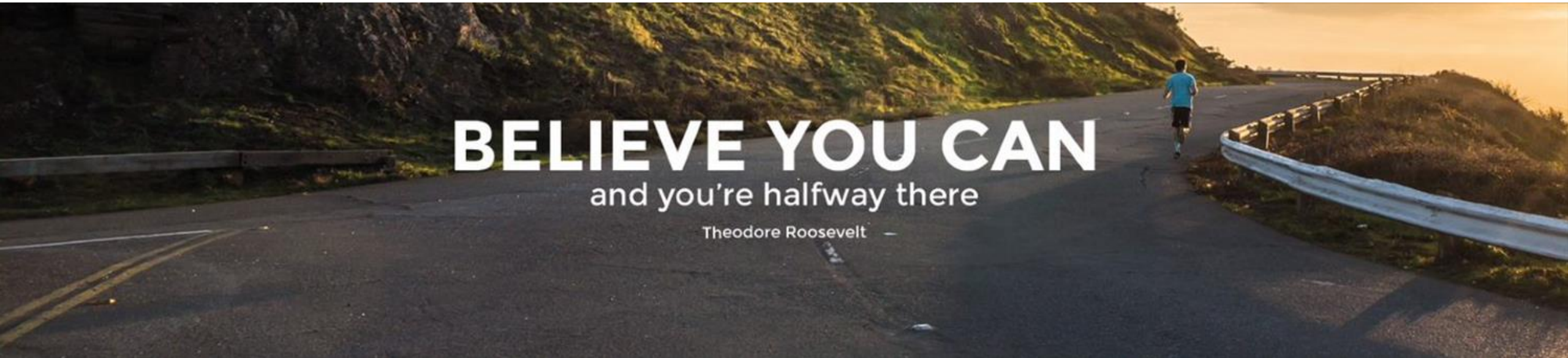
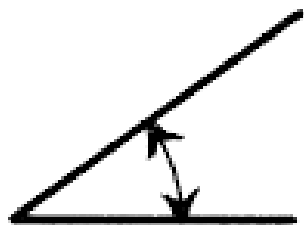


# EB Education Revision Guide

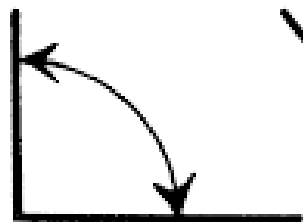


## How to work with Angles: Part 1

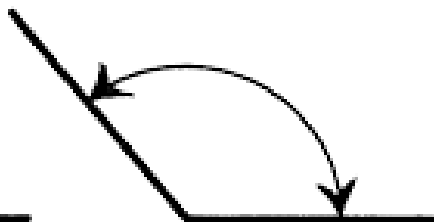
# Angle Names



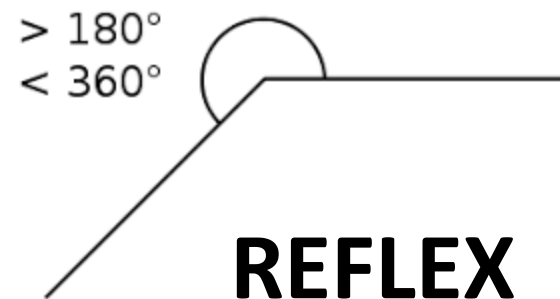
**ACUTE**



**RIGHT**



**OBTUSE**



**REFLEX**

Acute angles are less than  $90^\circ$

Right angles are exactly  $90^\circ$

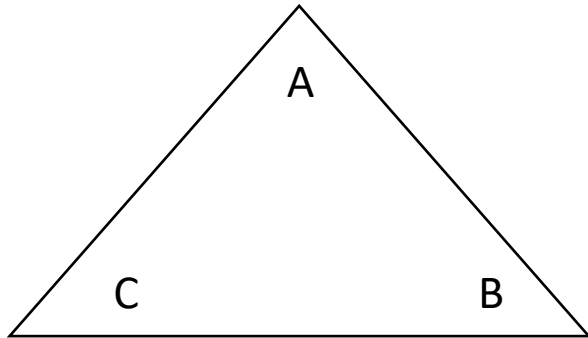
Obtuse angles are between  $90^\circ$  and  $180^\circ$

Reflex angles are greater than  $180^\circ$  and less than  $360^\circ$



# Angle Rules

1. Angles in a triangle add up to  $180^\circ$



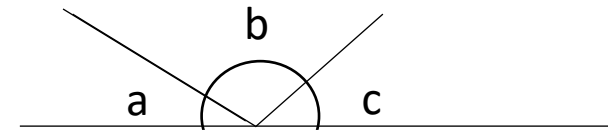
$$A + B + C = 180^\circ$$

**TOP TIPS:**

All angles in an equilateral triangle are the same size,  $60^\circ$ .

In an isosceles triangle, the two base angles are the same size.

2. Angles on a straight line add up to  $180^\circ$



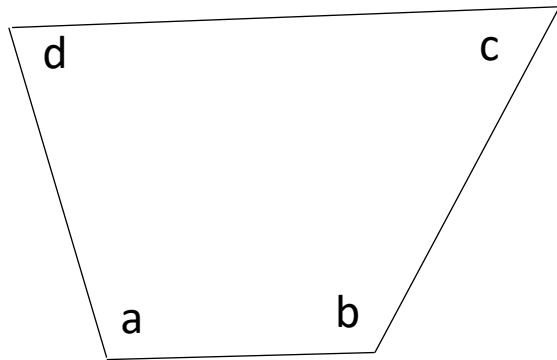
$$a + b + c = 180^\circ$$



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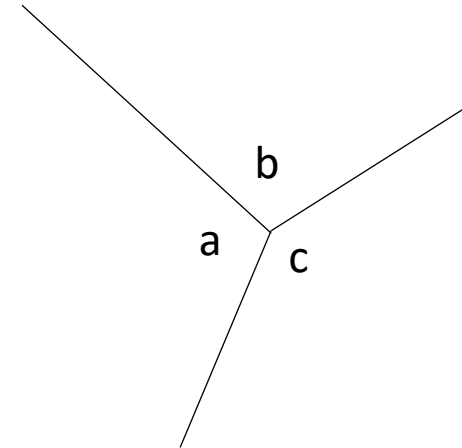
# Angle Rules

3. Angles in a quadrilateral add up to  $360^\circ$



$$a + b + c + d = 360^\circ$$

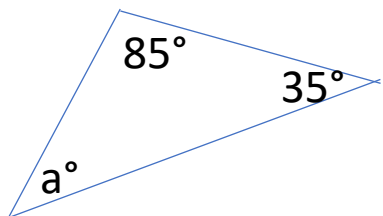
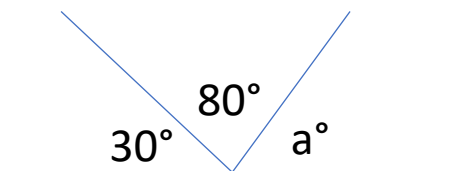
4. Angles around a point add up to  $360^\circ$



$$a + b + c = 360^\circ$$

# Using Angle Rules

## Examples:



## How to do it:

Angles on a straight line add up to  $180^\circ$

Add known angles together:

$$80^\circ + 30^\circ = 110^\circ$$

Subtract from  $180^\circ$ :

$$180^\circ - 110^\circ = 70^\circ \quad a = 70^\circ$$

Angles in a triangle add up to  $180^\circ$

Add known angles together:

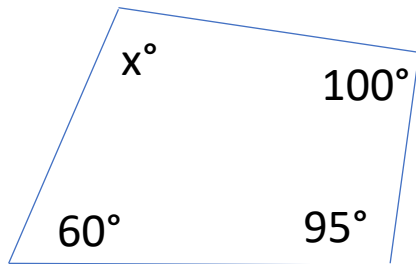
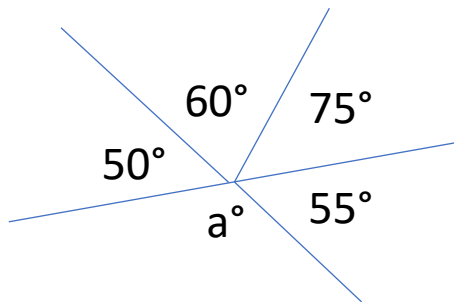
$$85^\circ + 35^\circ = 120^\circ$$

Subtract from  $180^\circ$ :

$$180^\circ - 120^\circ = 60^\circ \quad a = 60^\circ$$

# Using Angle Rules

## Examples:



## How to do it:

Angles around a point add up to  $360^\circ$

Add known angles together:

$$50^\circ + 60^\circ + 75^\circ + 55^\circ = 240^\circ$$

Subtract from  $360^\circ$ :

$$360^\circ - 240^\circ = 120^\circ \quad a = 120^\circ$$

Angles in a quadrilateral add up to  $360^\circ$

Add known angles together:

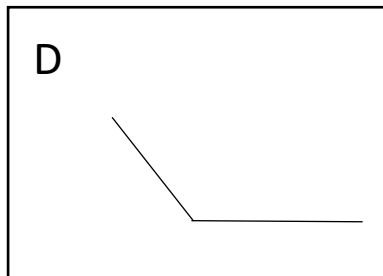
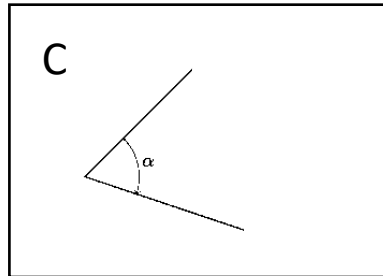
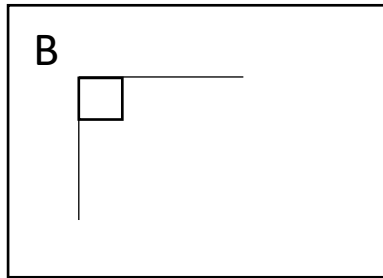
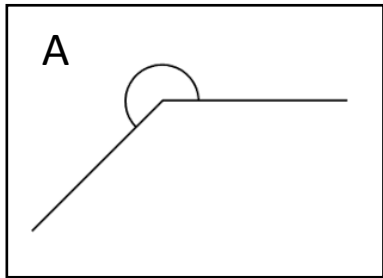
$$100^\circ + 60^\circ + 95^\circ = 255^\circ$$

Subtract from  $360^\circ$ :

$$360^\circ - 255^\circ = 105^\circ \quad a = 105^\circ$$

# Your turn:

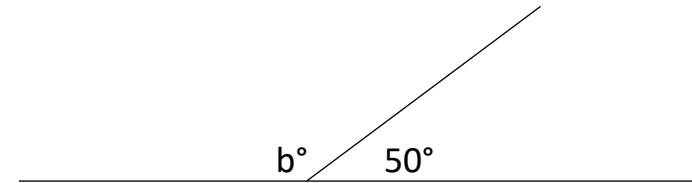
1. There are four angles drawn below



a) Which angle is obtuse?

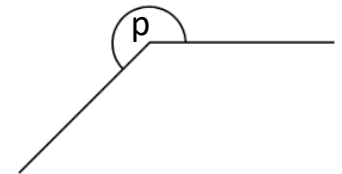
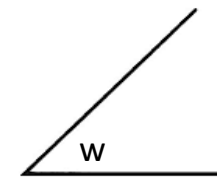
.....

b) What size is the angle marked  $b^\circ$



.....

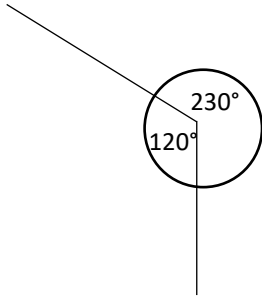
c) Write down the names for these angles.



.....

.....

2. The diagram below is wrong. Explain why.



.....

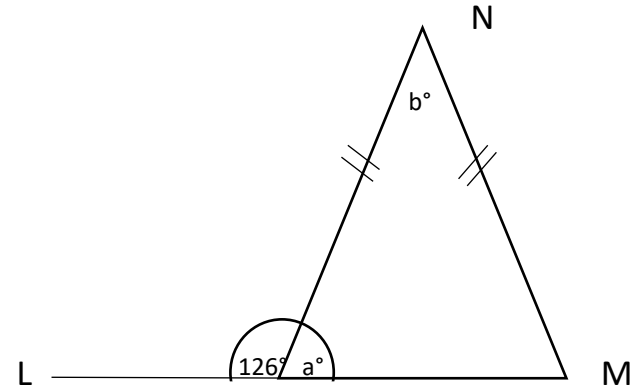
.....

.....

.....

# Your turn:

3.



LM is a straight line.

a) Calculate the size of the angle marked  $a^\circ$ .

.....

b) Calculate the size of the angle marked  $b^\circ$ , giving reasons for your answer.

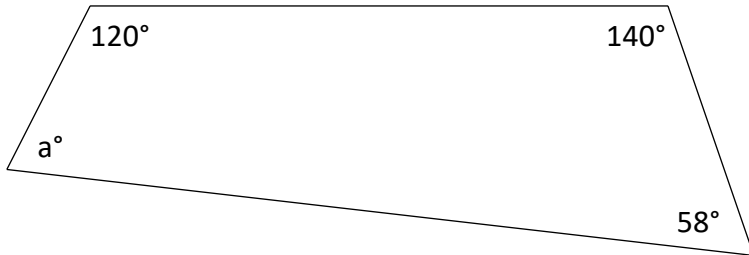
.....

.....



# Your turn:

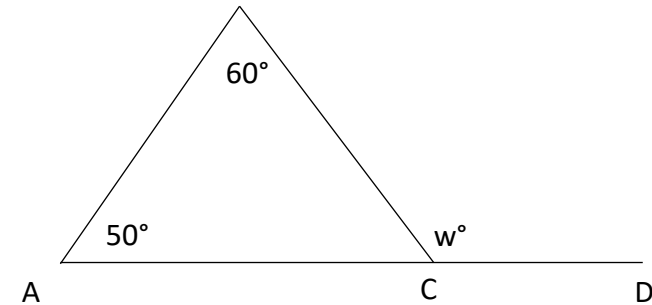
4. Work out the size of angle a



.....  
.....  
.....  
.....  
.....

5. The diagram below shows a triangle. ACD is a straight line.

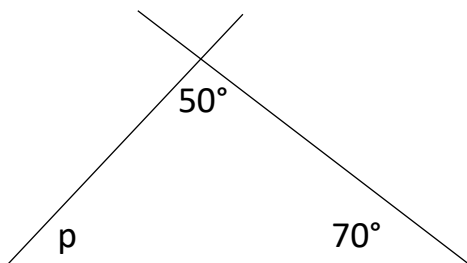
Calculate the size of angle w.



.....  
.....  
.....  
.....

# Your turn:

6. Work out the size of the angle marked p.



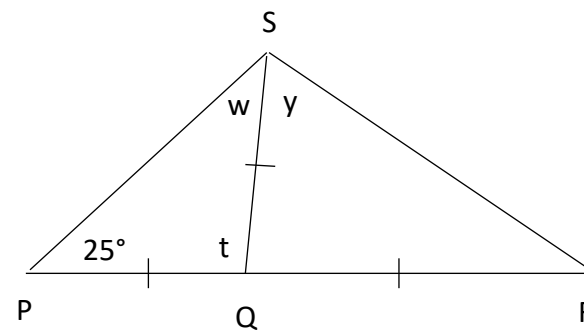
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7. PQR is a straight line.  
PQ = QS = QR



a) What is the size of angle w?

.....

.....

b) What is the size of angle t?

.....

.....

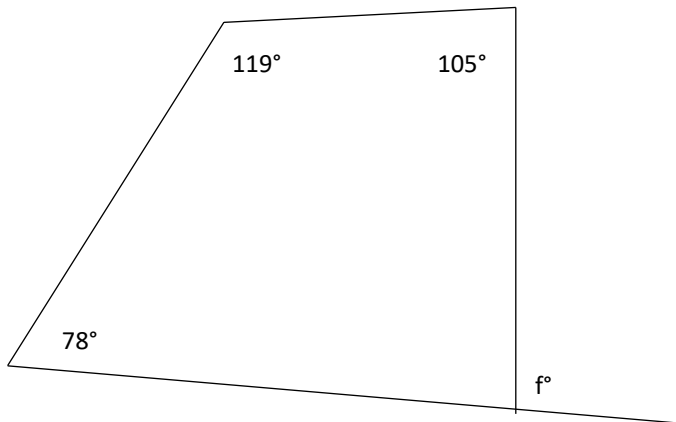
c) What is the size of angle y?

.....

.....

# Your turn:

8. Work out the value of  $f$ ?



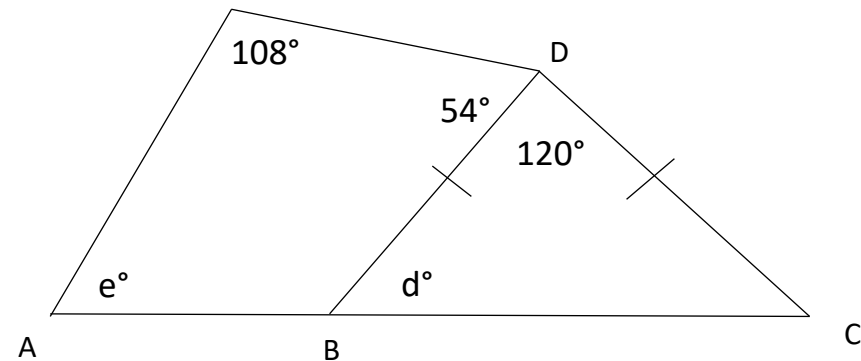
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9. In the diagram below, ABC is a straight line.  
BD = CD



a) What is the size of angle  $d$ ?

.....

.....

b) What is the size of angle  $e$ ?

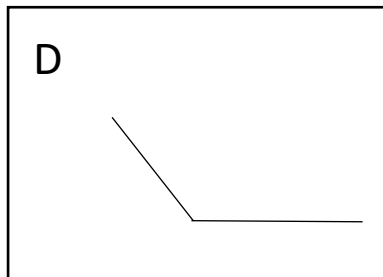
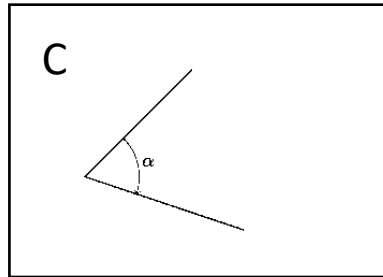
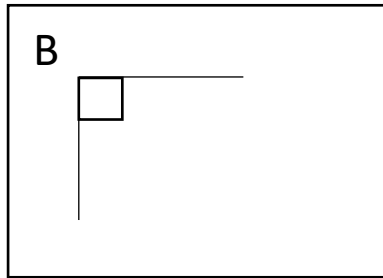
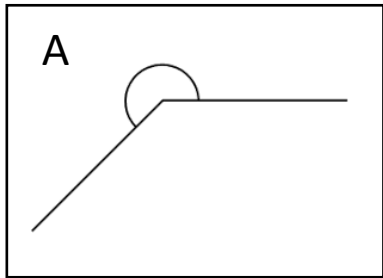
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# Answers:

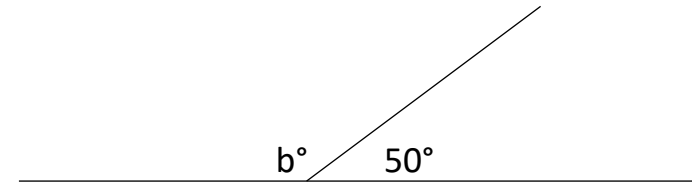
1. There are four angles drawn below



a) Which angle is obtuse?

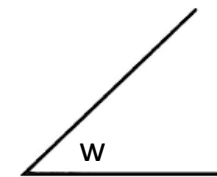
D

b) What size is the angle marked  $b^\circ$

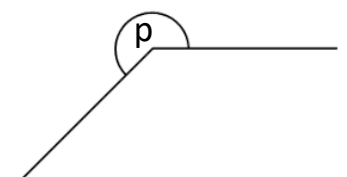


$$180^\circ - 50^\circ = 130^\circ$$

c) Write down the names for these angles.



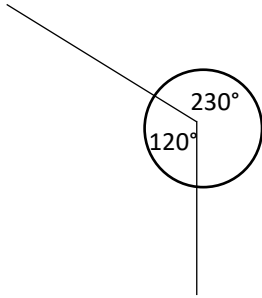
Acute



Reflex



2. The diagram below is wrong. Explain why.



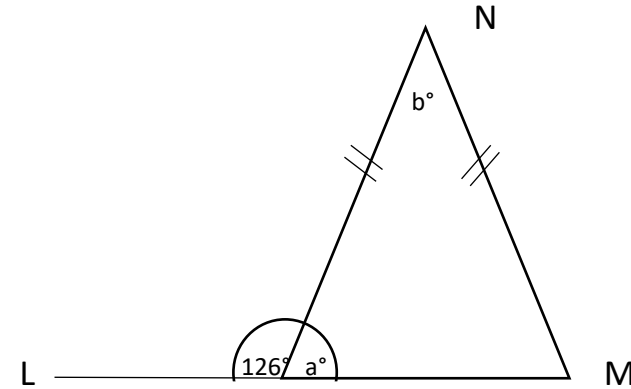
.....  
 $120^\circ + 230^\circ = 350^\circ$   
.....

.....  
Angles around a point add up to  
.....

$360^\circ$   
.....

# Answers:

3.



LM is a straight line.

a) Calculate the size of the angle marked  $a^\circ$ .

.....  
 $180^\circ - 126^\circ = 54^\circ$   
.....

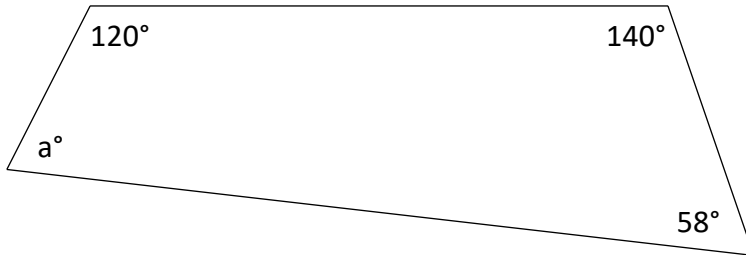
b) Calculate the size of the angle marked  $b^\circ$ , giving reasons for your answer.

.....  
 $180^\circ - (2 \times 54^\circ) = 72^\circ$   
.....

.....  
Angles in a triangle add up to  $180^\circ$ . It is an isosceles triangle so base angles are equal  
.....

# Answers:

4. Work out the size of angle a



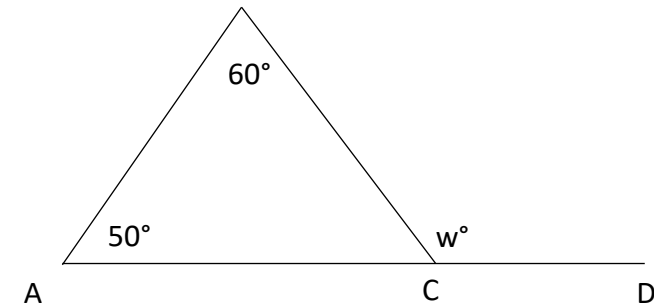
$$360^\circ - (120^\circ + 140^\circ + 58^\circ) = 42^\circ$$

Angles in a quadrilateral add up to

$$360^\circ$$

5. The diagram below shows a triangle. ACD is a straight line.

Calculate the size of angle w.



Angles in a triangle =  $180^\circ$ :

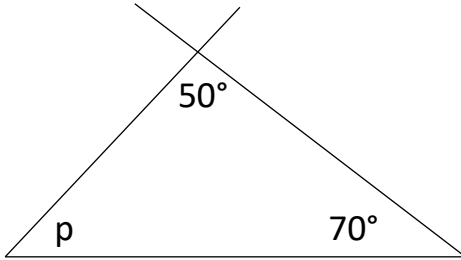
$$180^\circ - (60^\circ + 50^\circ) = 70^\circ$$

Angles on a straight line =  $180^\circ$ :

$$180^\circ - 70^\circ = 110^\circ$$

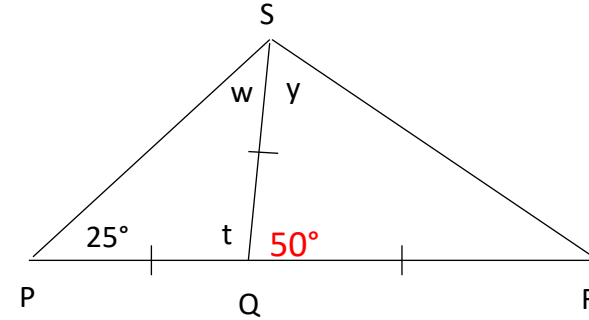
# Answers:

6. Work out the size of the angle marked p.



$$180^\circ - (50^\circ + 70^\circ) = 60^\circ$$

7. PQR is a straight line.  
PQ = QS = QR



a) What is the size of angle w?

$$25^\circ$$

b) What is the size of angle t?

$$180^\circ - (2 \times 25^\circ) = 130^\circ$$

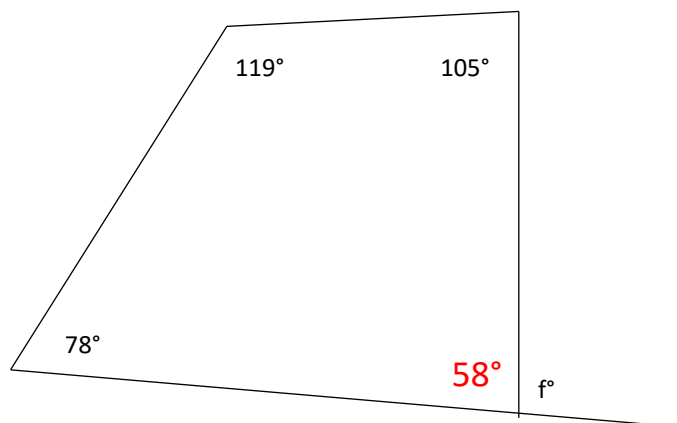
c) What is the size of angle y?

$$180^\circ - 130^\circ = 50^\circ$$

$$130^\circ / 2 = 65^\circ \quad y = 65^\circ$$

# Answers:

8. Work out the value of f?

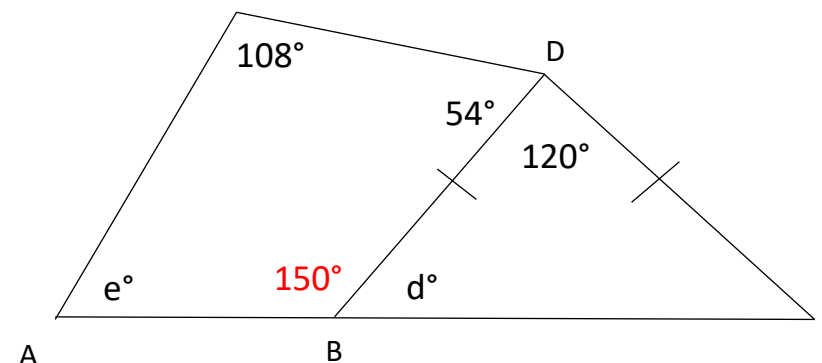


$$360^\circ - (119 + 105 + 78) = 58^\circ$$

$$180^\circ - 58^\circ = 122^\circ$$

$$f = 122^\circ$$

9. In the diagram below, ABC is a straight line.  
BD = CD



a) What is the size of angle d?

$$180^\circ - 120^\circ = 60^\circ$$

$$60^\circ \div 2 = 30^\circ \quad d = 30^\circ$$

b) What is the size of angle e?

$$180^\circ - 30^\circ = 150^\circ$$

$$360 - (108 + 54 + 150) = 48^\circ \quad e = 48^\circ$$



For more help and resources, or  
to work with us as a tutor, please  
contact us

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[contact@ebeducationservices.co.uk](mailto:contact@ebeducationservices.co.uk)

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