

EB Education Revision Guide

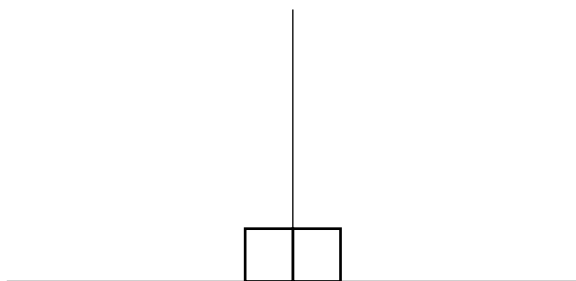


How to work with Angles: Part 2

Angles on Lines

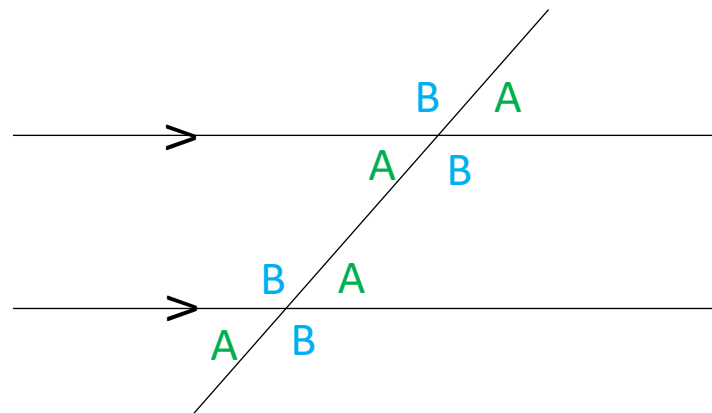
Perpendicular Lines

Perpendicular lines meet at 90° .



Parallel Lines

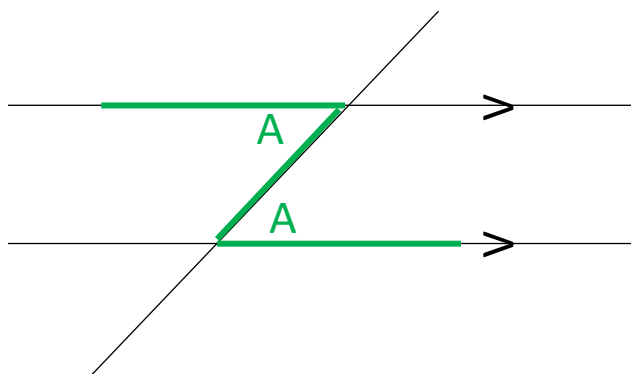
The two lines with arrows on are parallel lines. There are two different angles, A and B. A and B angles always add up to 180° .



Angles around Parallel Lines

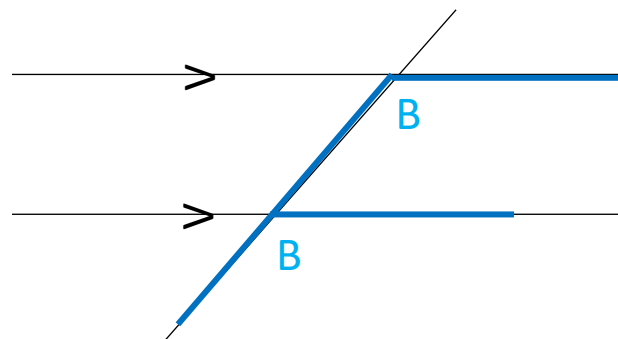
Alternate Angles

Alternate angles are the same.
You need to look for a Z shape to find them.



Corresponding Angles

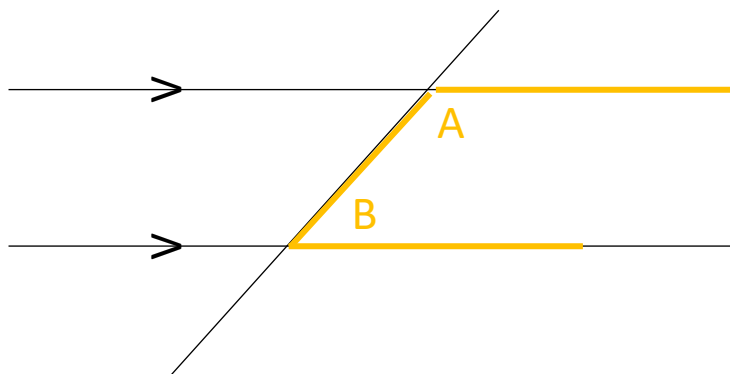
Corresponding angles are the same.
You need to look for an F shape to find them.



Angles around Parallel Lines

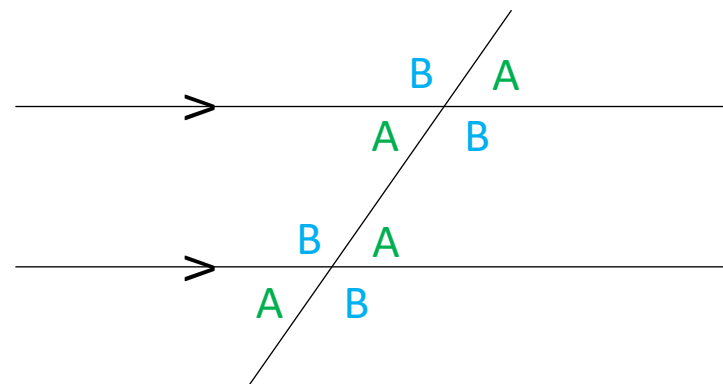
Allied/Interior Angles

Allied or interior angles add up to 180° .
You need to look for a C or U shape to find them.



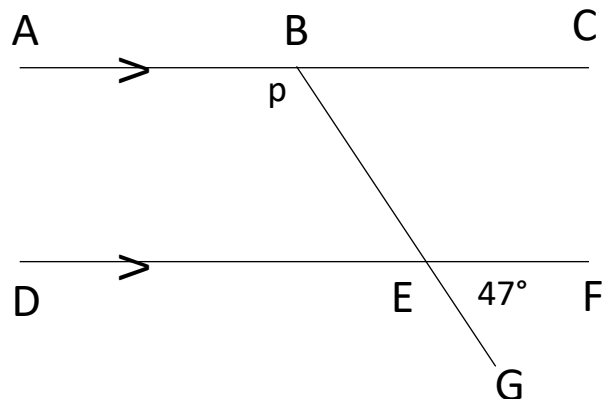
Vertically opposite angles

Vertically opposite angles are equal.
 $A = A$ and $B = B$.



Using Angle Rules

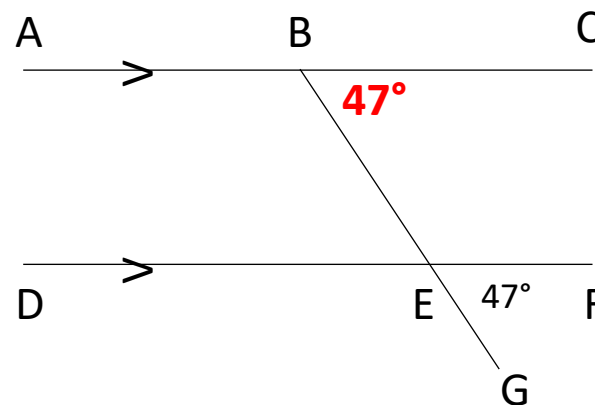
Example



ABC and DEF are parallel lines.
BEG is a straight line.
Angle GEF = 47°

What is the size of the angle marked p?

How to do it



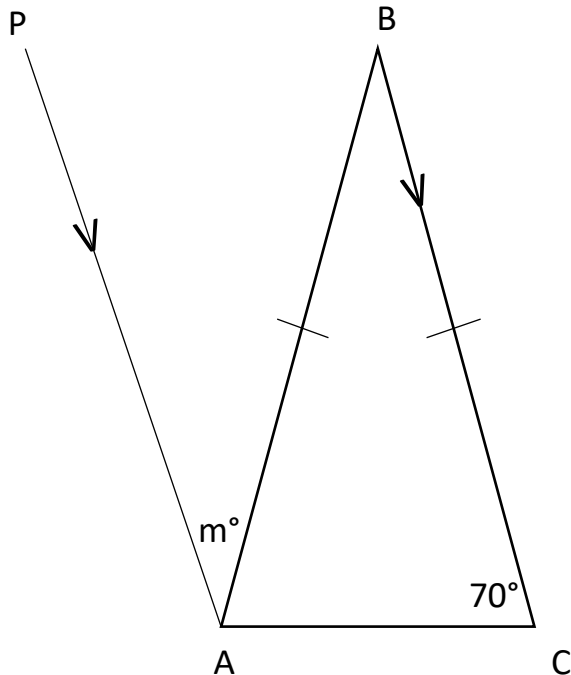
1. $\angle CBE$ is 47° as it is a corresponding angle to $\angle GEF$ (look for the F shape)
2. Angles on a straight line add up to 180°
 $180 - 47 = 133$
 $p = 133^\circ$

TOP TIP:

Always write down the angle facts you have used to work out your answer.

Using Angle Rules

Example:



ABC is an isosceles triangle.

BA = BC

PA is parallel to BC.

Angle ACB = 70°

Find the value of m°

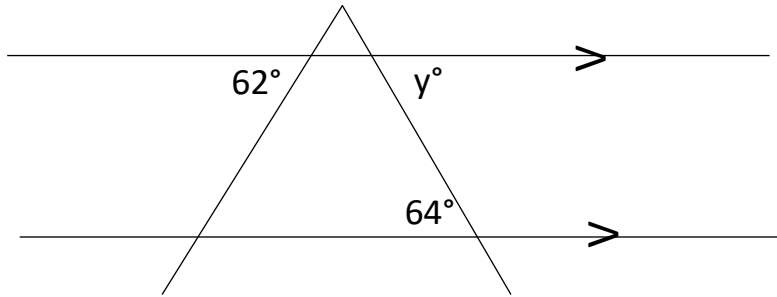
How to do it:

Look for how you can use angle facts:

1. $\angle BAC$ is 70° as it is an isosceles triangle.
2. $\angle ABC$ is $180^\circ - (70^\circ \times 2)$ as angles in a triangle add up to 180°. So $\angle ABC = 40^\circ$
3. $m = 40^\circ$ as $\angle ABC$ and $\angle PAB$ are alternating angles

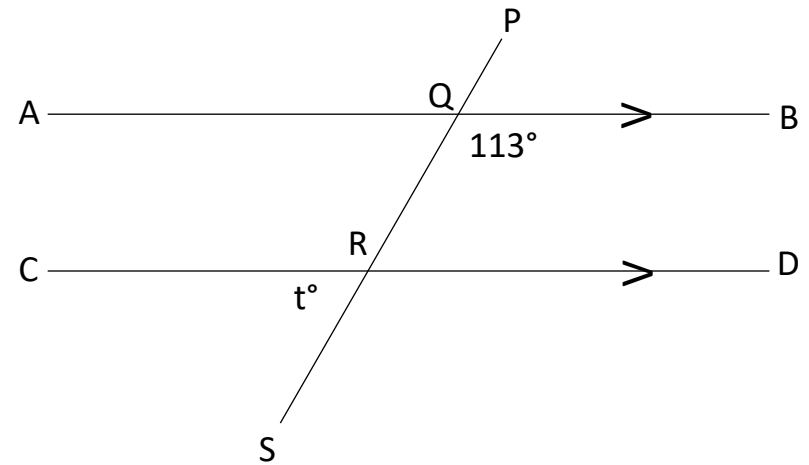


Your turn:



1. Calculate the size of angle y° and give a reason for your answer.

.....

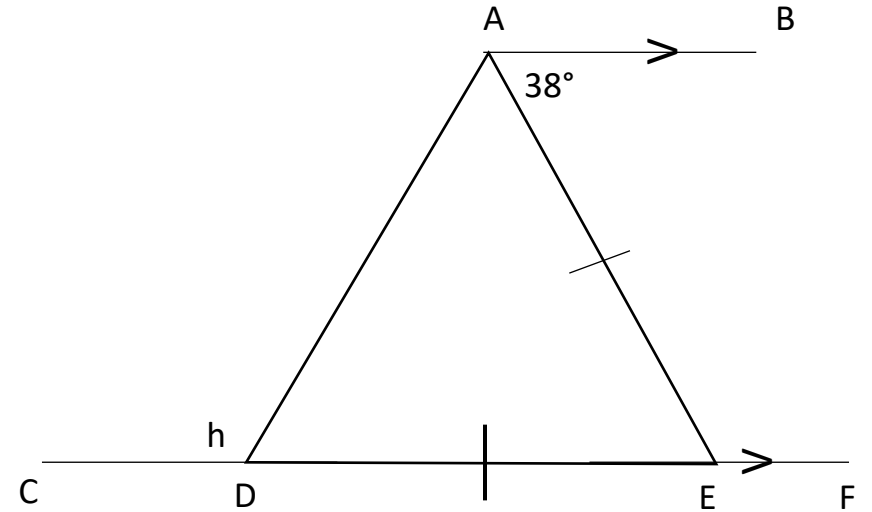
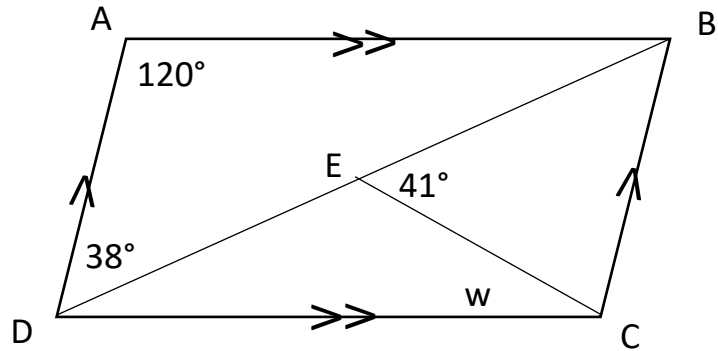


2. AQB, CRD and PQRS are straight lines.
 AB is parallel to CD.
 Angle BQR = 113° .
 What is the value of t ?

.....



Your turn:



3. ABCD is a parallelogram.

Calculate the size of angle w. Give reasons for your answer.

.....

4. CDEF is a straight line.

AB is parallel to CF.

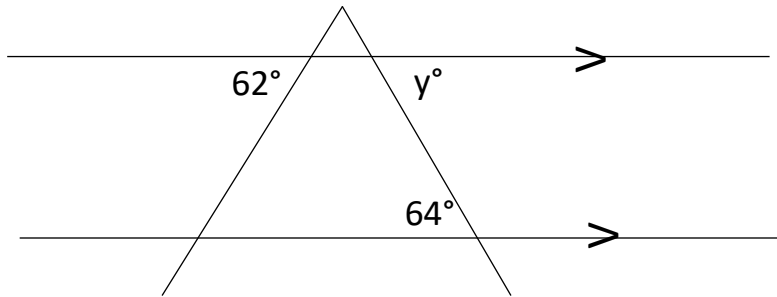
DE = AE

Calculate the size of angle f. Give reasons for your answer.

.....



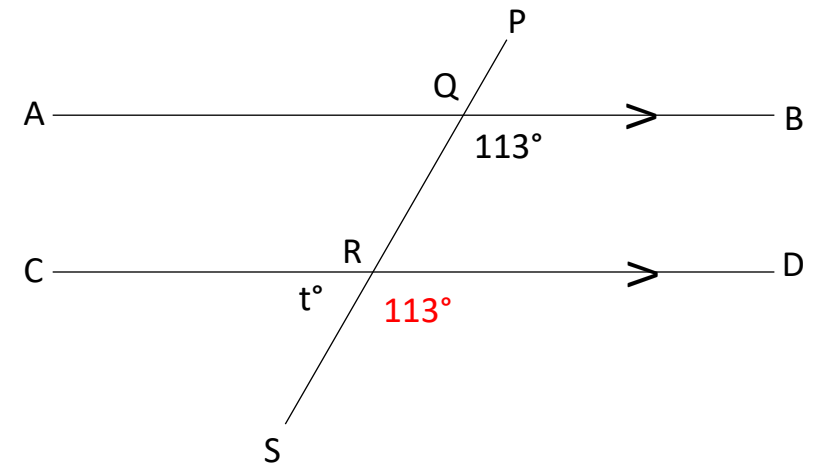
Answers:



1. Calculate the size of angle y° and give a reason for your answer.

$Y = 64^\circ$

It is an alternate angle and alternate angles are equal



2. AQB, CRD and PQRS are straight lines.
AB is parallel to CD.
Angle BQR = 113° .
What is the value of t ?

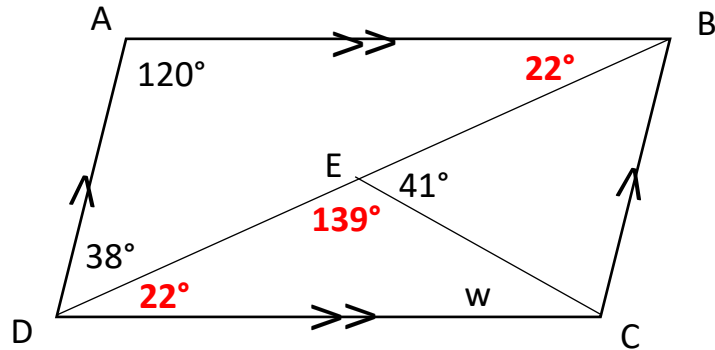
$T = 67^\circ$

Corresponding angles are equal (look out for the F shape)

Angles on a straight line add up to 180°
($180 - 113 = 67$)



Answers:



3. ABCD is a parallelogram.

Calculate the size of angle w. Give reasons for your answer.

Angles in a triangle add up to 180°

..... Alternating angles are equal. (look out for the Z shape)

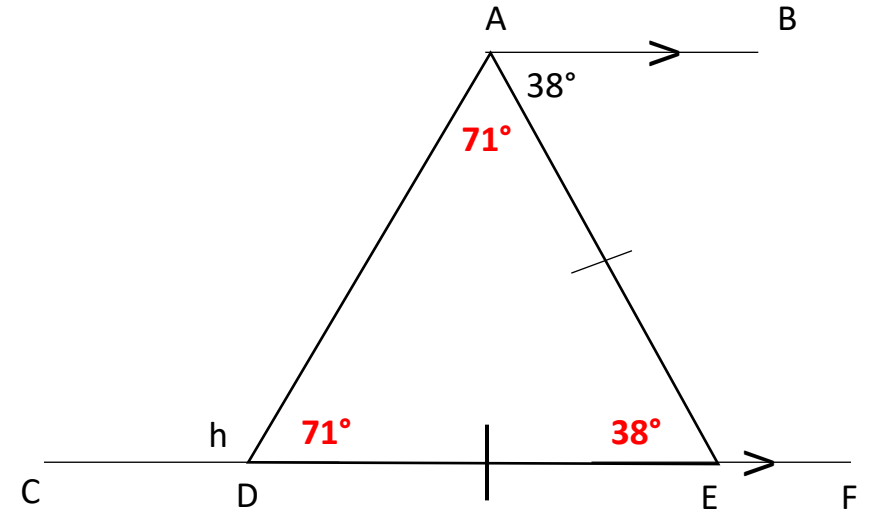
..... Angles on a straight line add up to 180°

..... (180 - 41 = 139)°

..... Angles in a triangle add up to 180°

..... (180 - 22 - 139 = 19)

..... x = 19°



4. CDEF is a straight line.

AB is parallel to CF.

DE = AE

Calculate the size of angle f. Give reasons for your answer.

..... Alternating angles are equal.

..... Isosceles triangle so $\angle DAE = \angle ADE$ ($180 - 38/2 = 71$)

..... Angles on a straight line add up to 180° ($180 - 71 = 109$)

..... x = 109°

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

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