Fast Five

1) 564.032 X 100 =
2) 1/8 + 2/8 =
3) 0.56 + 54.92 =
4) 35 X 60 =
5) 35% of 120 =

Fast Five

1) 564.032 X 100 = 56403.2
2) 1/8 + 2/8 = 3/8
3) 0.56 + 54.92 = 55.48
4) 35 X 60 = 2100
5) 35% of 120 = 42

Can I find unknown angles in 2D shapes?

Triangles

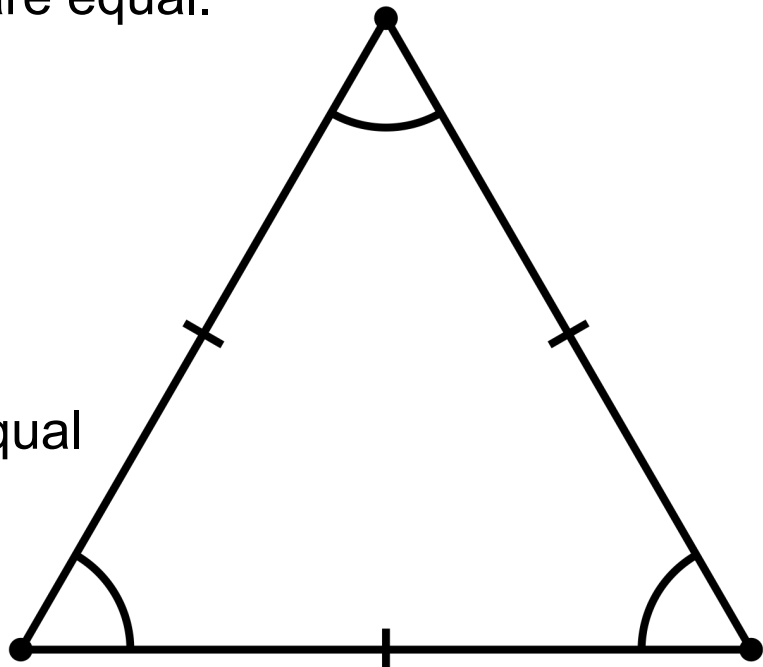
For any triangle, all angles should add up to 180°

An equilateral triangle means that all angles are equal.

Therefore…

180° ÷ 3 = 60°

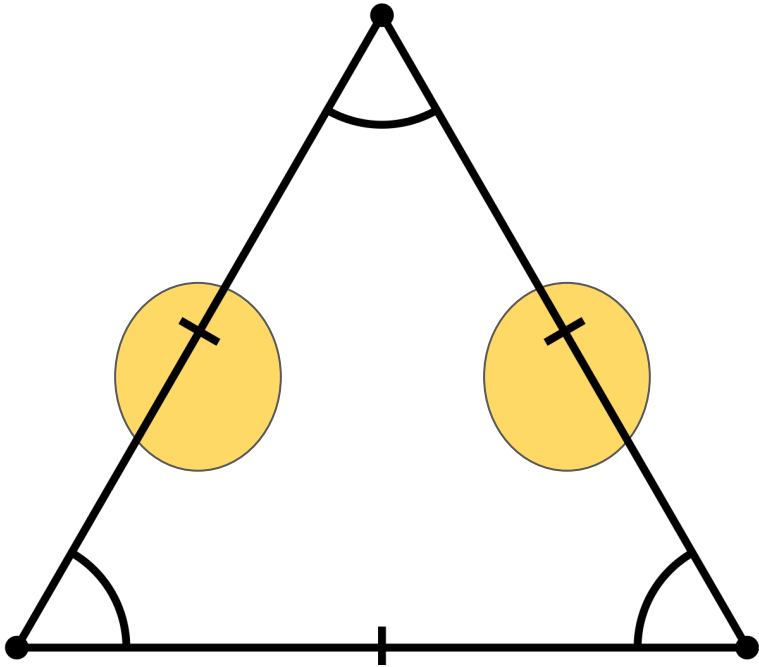
So, all 3 angles must be 60° as they are all equal



Triangles

Small lines are used to indicate

that the opposite line is equal - therefore the same angle



Let's try this question together...

NOT TO SCALE

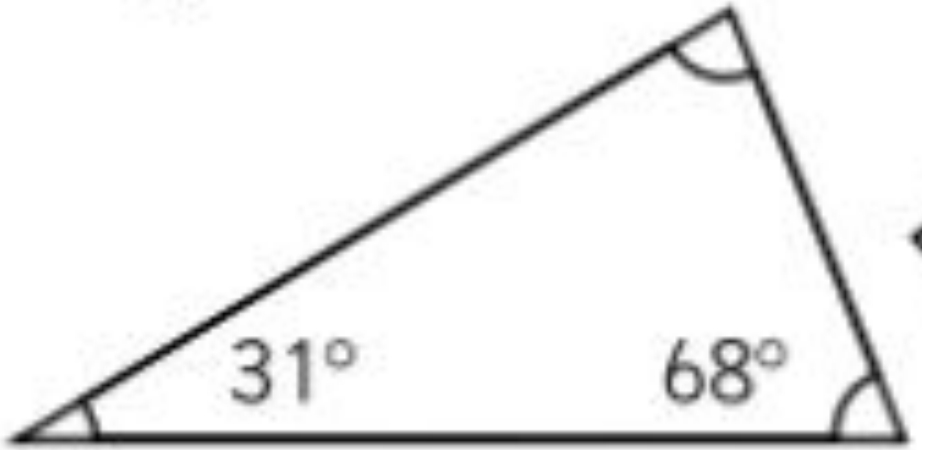
I know all inside angles of a triangle add up to 180°.

So…

180° - 31° - 68° = missing angle

180° - 31° - 68° = 81°

Missing angle = 81°



Now let's try this one together...

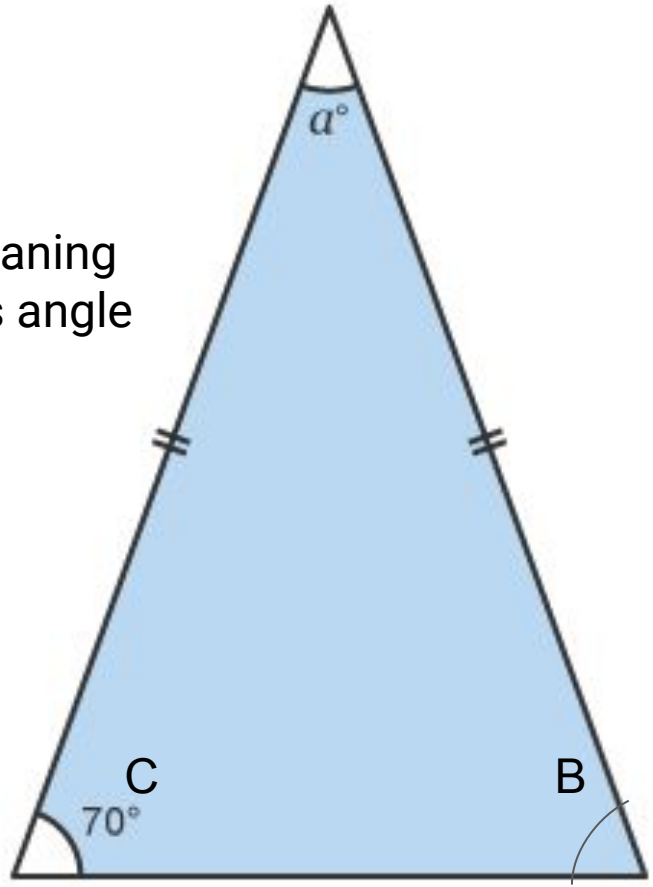
There are small lines on the 2 sides of the triangle, meaning the lines are equal. This means angle C is the same as angle B

So, now we know:
Angle C = 70°
Angle B = 70°

To find out angle a, we need to remember that all inside Angles of a triangle add up to 180°.

So…

Angle a = 180 (total) - 70 (angle B) - 70 (Angle C)
Angle a = 40°

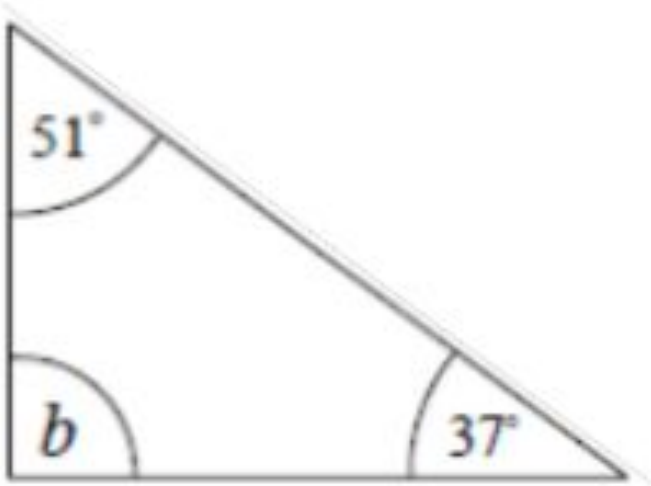


What is the value of $a°$?

Have a go at this one…

Find the missing angle of the triangle (angle *b*)…

NOT TO SCALE



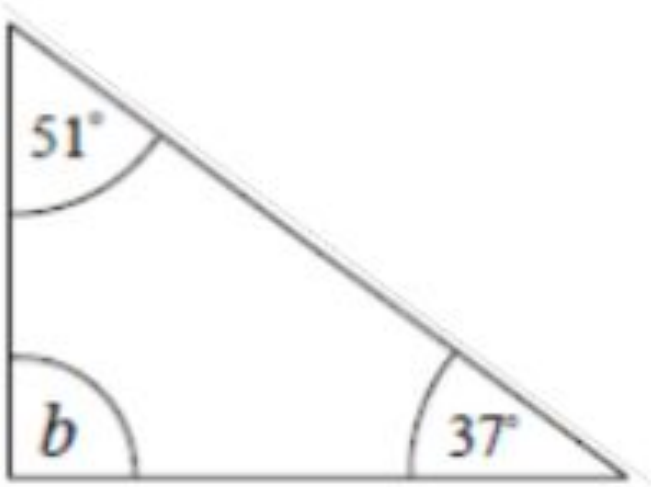
The answer...

All the inside angles of a triangle add up to 180°.

So, 180 - 51 - 37 = angle *b*

180 - 51 - 37 = **92°**

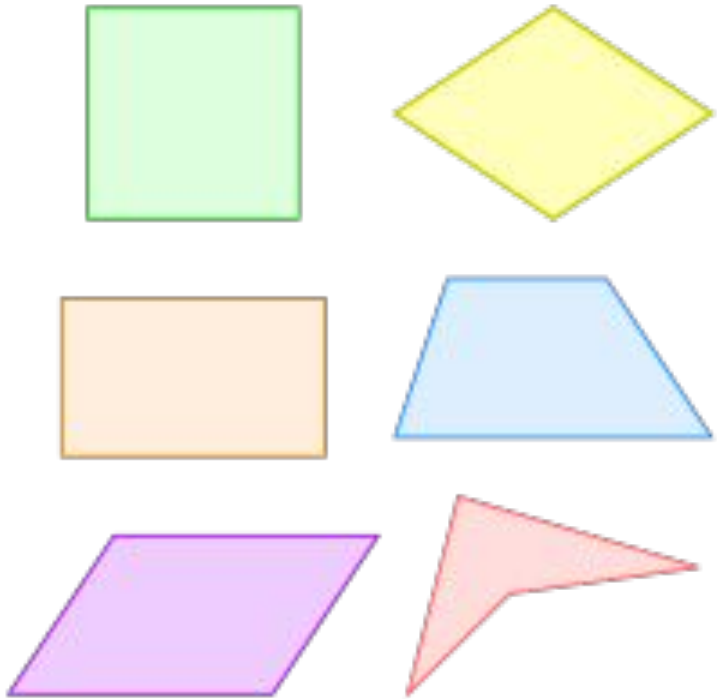
NOT TO SCALE



Quadrilaterals...

A quadrilateral is a shape with 4 sides

All inside angles of a quadrilateral add up to 360°



Let's try this one together...

NOT TO SCALE

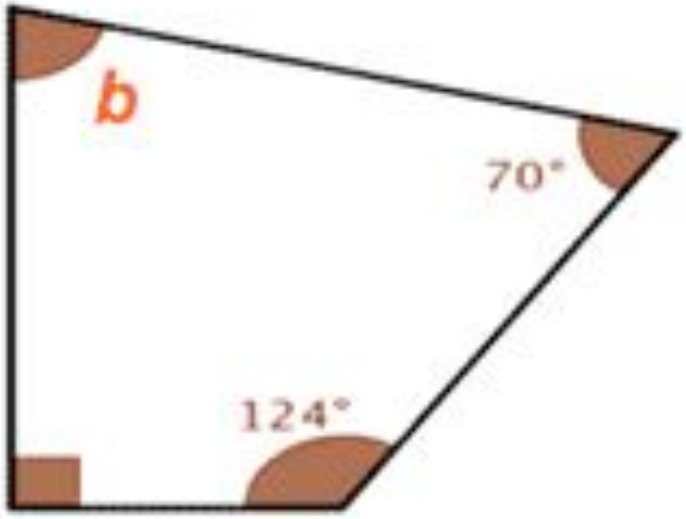
All inside angles of a quadrilateral add up to 360°

I know that the  means 90° (a right angle)

So,

360° - 70° - 124° - 90° = angle b

360° - 70° - 124° - 90 = **76°**



NOT TO SCALE

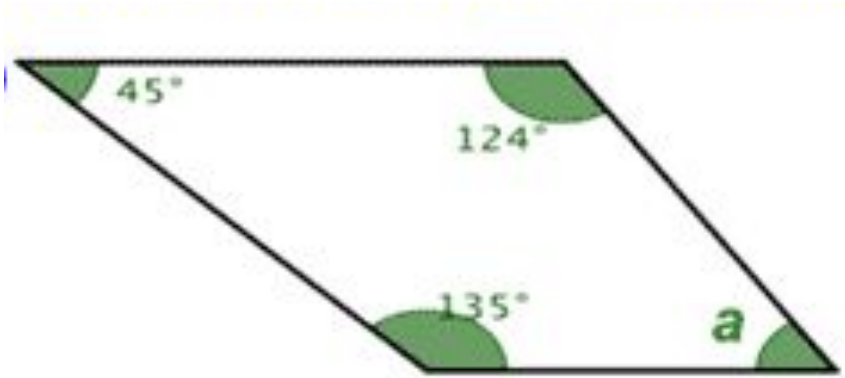
Now try this one…

Find the missing angle (angle a)

Now try this one…

NOT TO SCALE

All inside angles of a quadrilateral add up to 360°

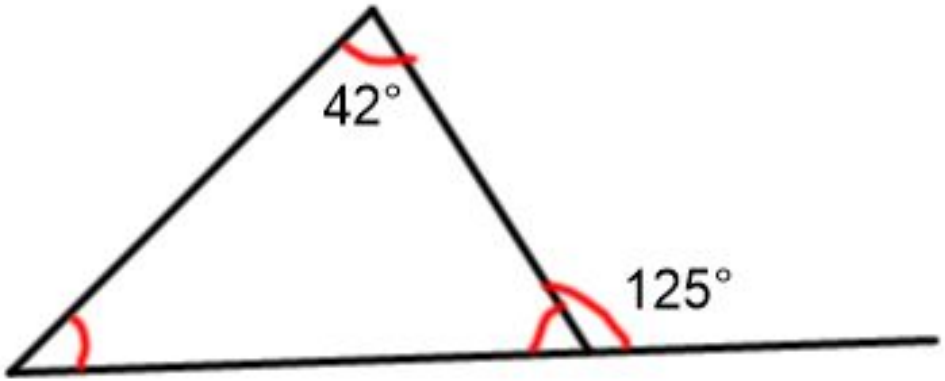


So,

360° - 45° - 124° - 135° = angle a

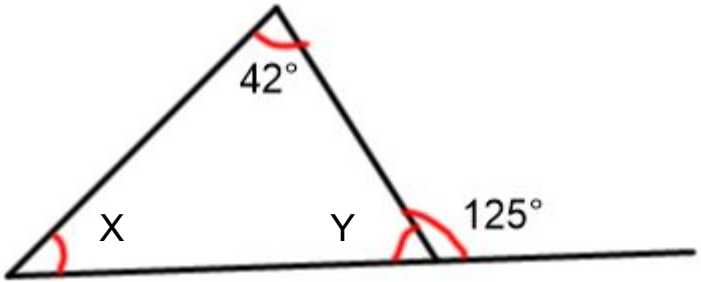
360° - 45° - 124° - 135° = **56°**

Another way we can find the sizes of missing angles in shapes is by also using given EXTERIOR angles.



NOT TO SCALE

It is possible to use the given internal angle of this triangle and the given exterior angle to find the sizes of the two remaining interior angles.



NOT TO SCALE

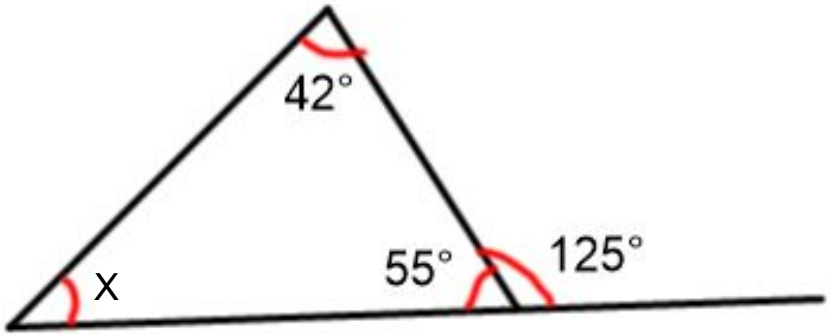
To do this, we need to remember:
-The sum of the internal angles of a triangle will ALWAYS be 180°.

-The sum of angles on a straight line will also always be 180°.

We'll start with this to find the size of angle Y.

180 - 125 = 55

Angle Y in this triangle is therefore 55°



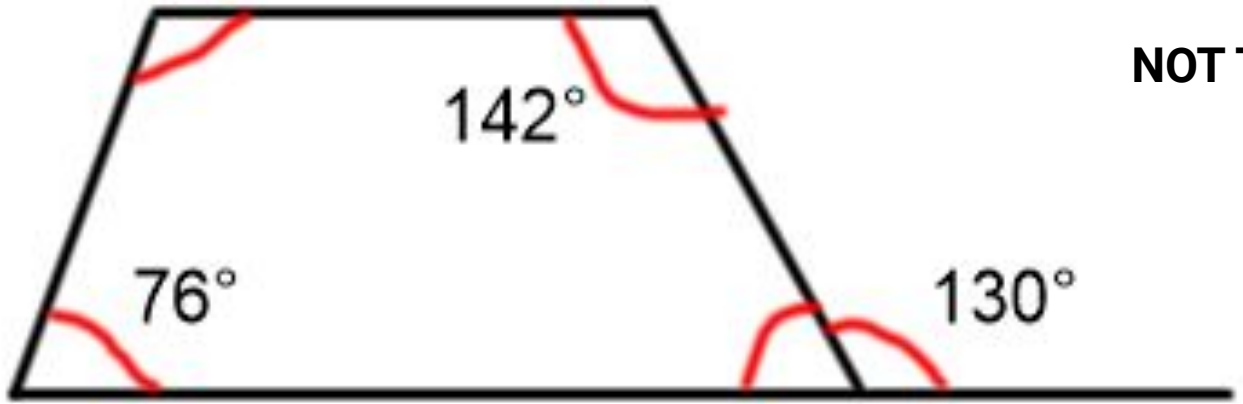
NOT TO SCALE

Now that we have two of the internal angles of this triangle, we can work out the size of the remaining angle using our knowledge of the sum of the internal angles of a triangle.

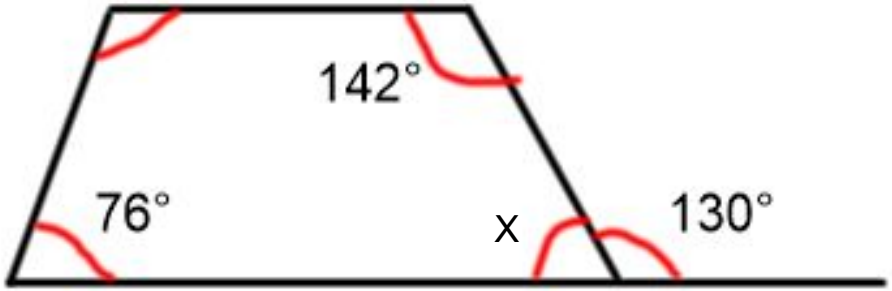
42 + 55 = 97°

180 - 97 = 83°

This also works on quadrilaterals, where we know the sum of the internal angles to be 360°. Find the sizes of the missing angles on this quadrilateral.



NOT TO SCALE



NOT TO SCALE

We know that angle X is equal to 180 - 130, which is 50°

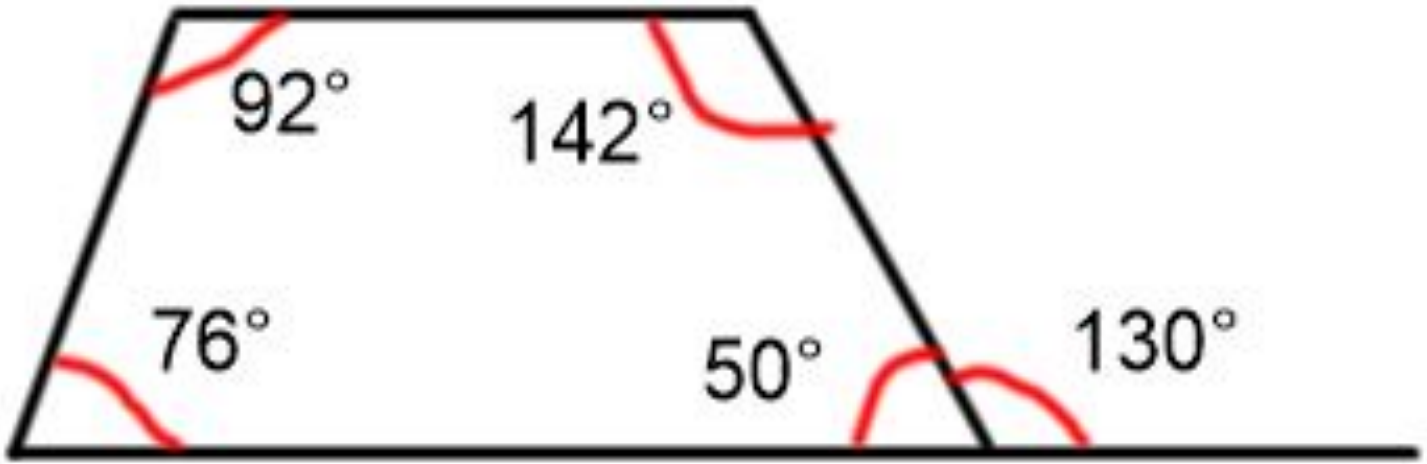
Now we need to do

76 + 142 + 50 = 268°

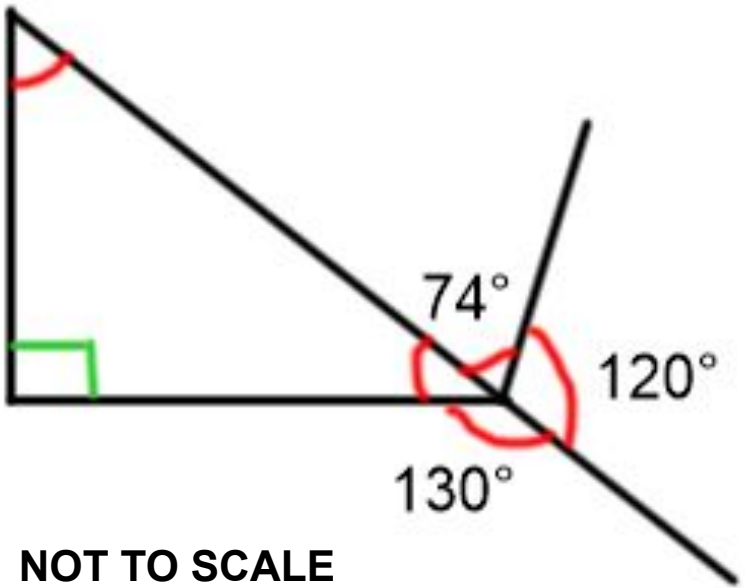
The sum total of the internal angles of this shape must be 360°, so next we do

360 - 268 = 92°

NOT TO SCALE



We can also go a step further with this and add angles around a point, which will add up to 360°



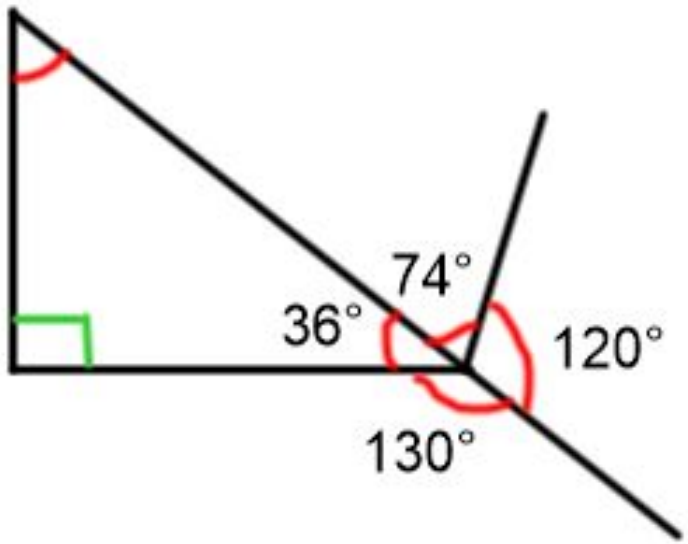
NOT TO SCALE

To find the missing angles here, we need to first find the size of the angle in the bottom right of the triangle.

To do this, we add our three angles to see what we need to make the full 360°

120 + 130 + 74 = 324°

360 - 286 = 36°



NOT TO SCALE

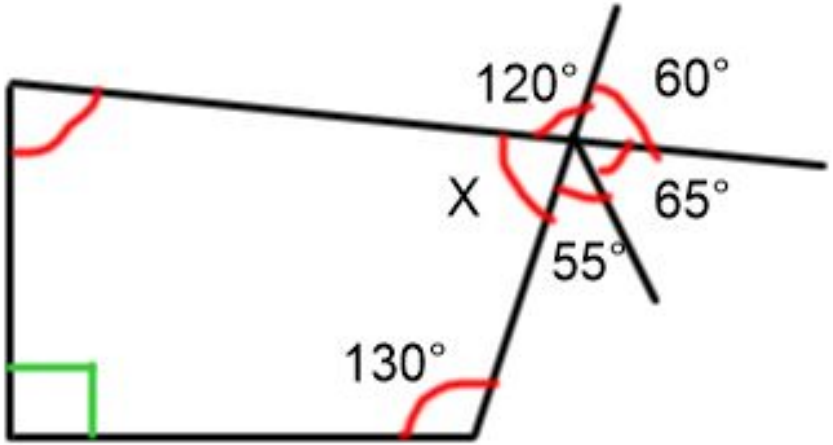
With this angle now recorded, we can find out final angle.

We don’t need to record the angle on the bottom left of the triangle, as it’s a right angle and therefore we know it’s 90°

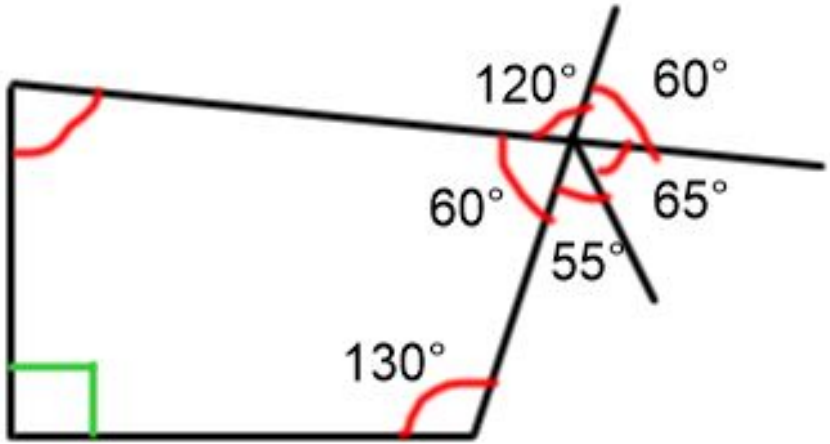
90 + 36 = 126°

180 - 126 = 54°

As before, this also works on quadrilaterals, so try to find the missing angles on this shape.



NOT TO SCALE



NOT TO SCALE

First, let's find angle X

120 + 60 + 65 + 55 = 300°

360 - 300 = 60°

We could have also seen this as the angles around this point make 2 sets of vertically opposite angles.

Our bottom left angle is a right angle, so we can add that to the other 2 angles we now know.

90 + 130 + 60 = 280°

360 - 280 = 80°