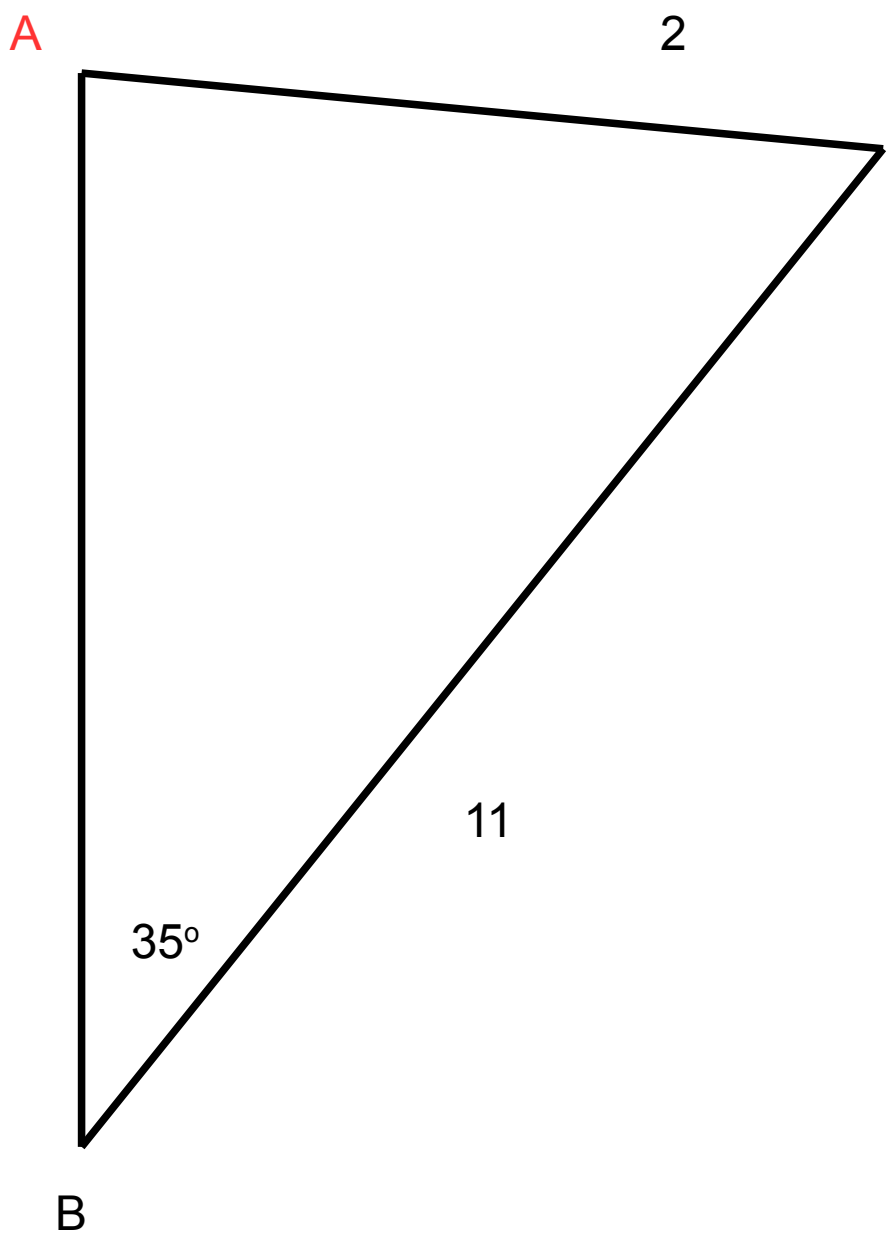
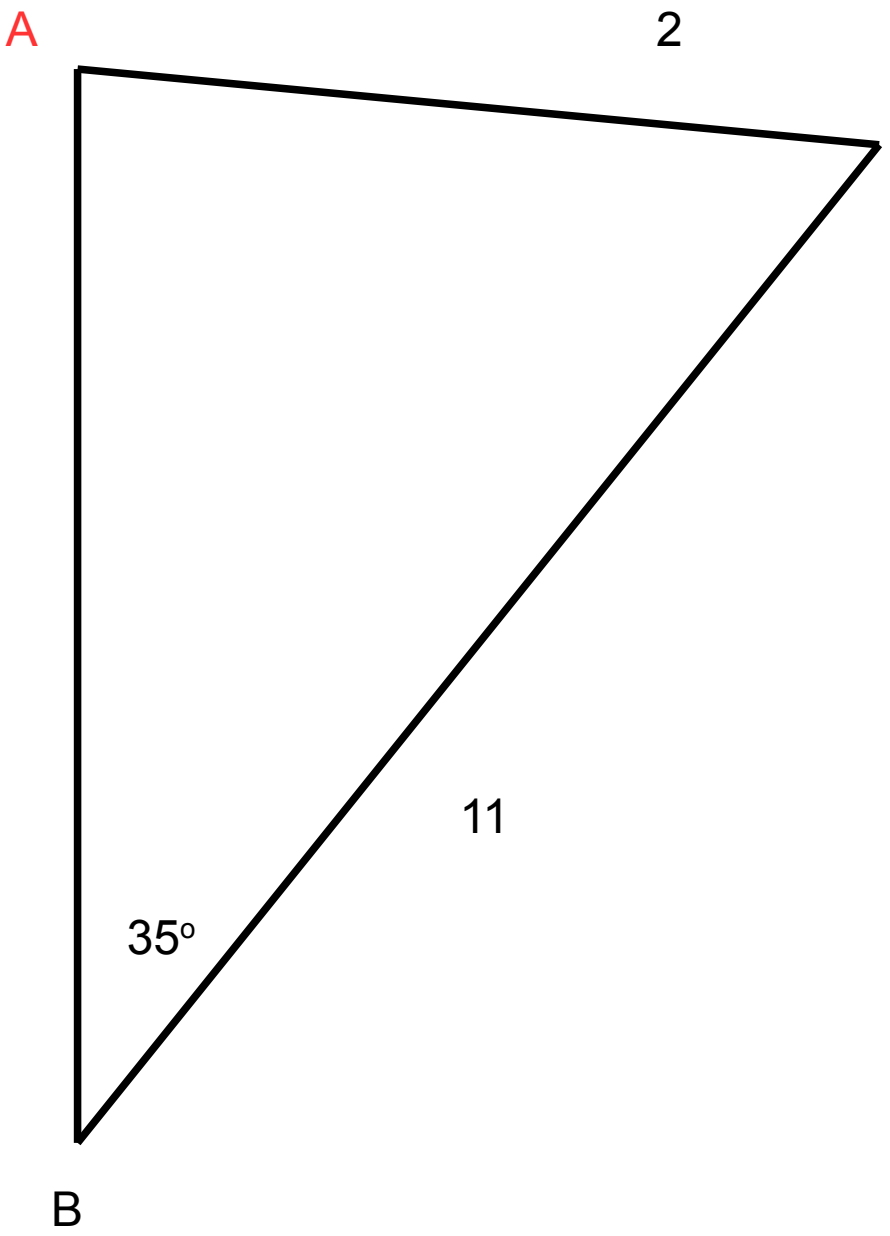


Try to find angle A

a/SinA = b/SinB

OR

SinA/a = SinB/b

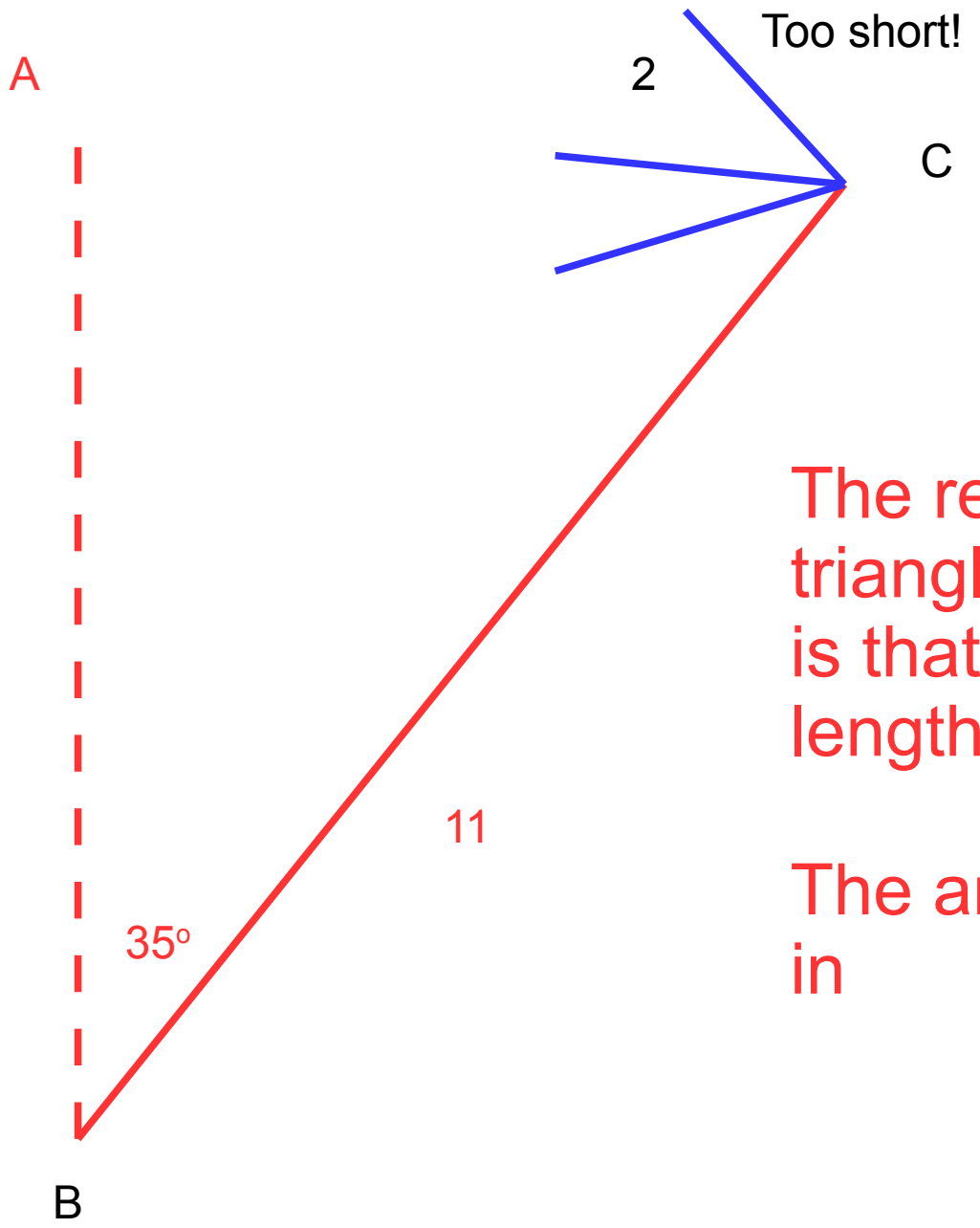


$\text{Sin}A/11 = \text{Sin}35/2$

$\text{Sin}A = (\text{Sin}35/2) \times 11$

$\text{Sin}A = 3.15$

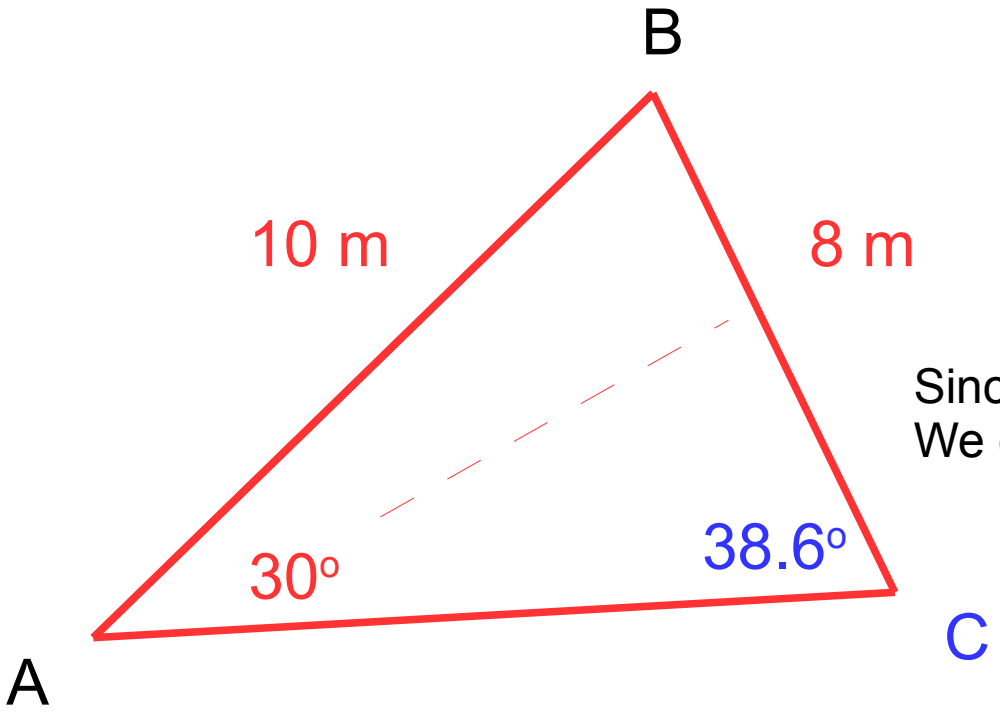
This will give us an ERROR because The most a sine Relationship can be is 1.0 (the OPP is 100% of the HYP)



The reason this triangle doesn't work is that the side with length 2 is too short

The angle 35o is locked in

Consider the following triangle:

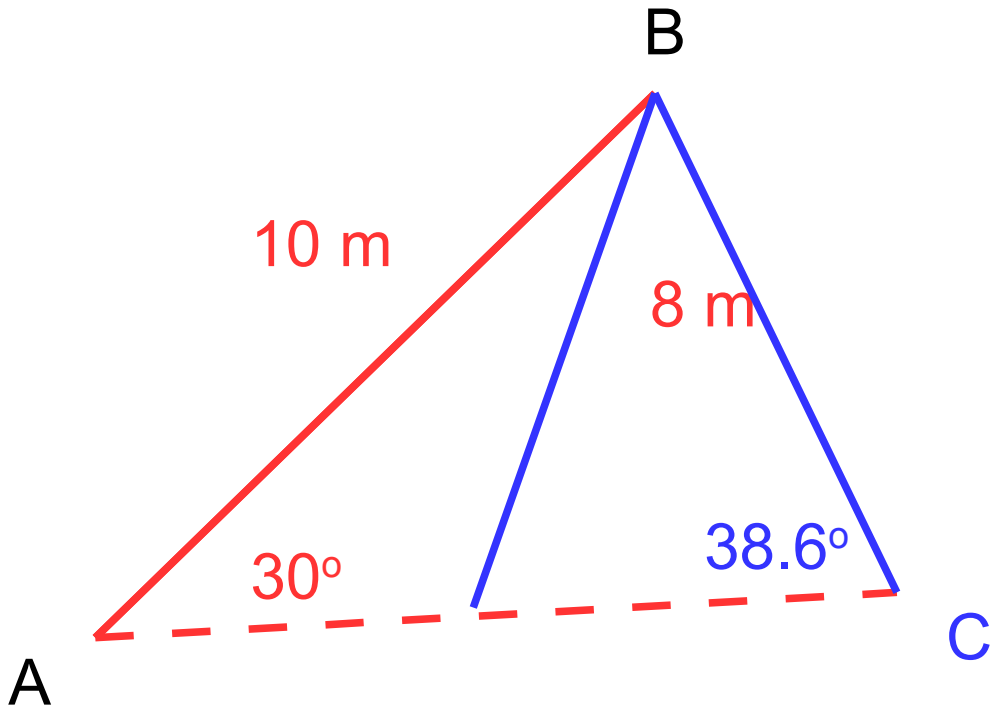


What is angle C?

Since we have this relationship (OPP)
We can use SINE law

SinA / a = SinC/c
Sin(30)/8 = SinC/10
0.0625 = SinC / 10
0.0625(10) = SinC
0.625 = SinC
C = Sin-1(0.625)
C = 38.6°

BUT! (the ambiguous case)
-- consider the same triangle



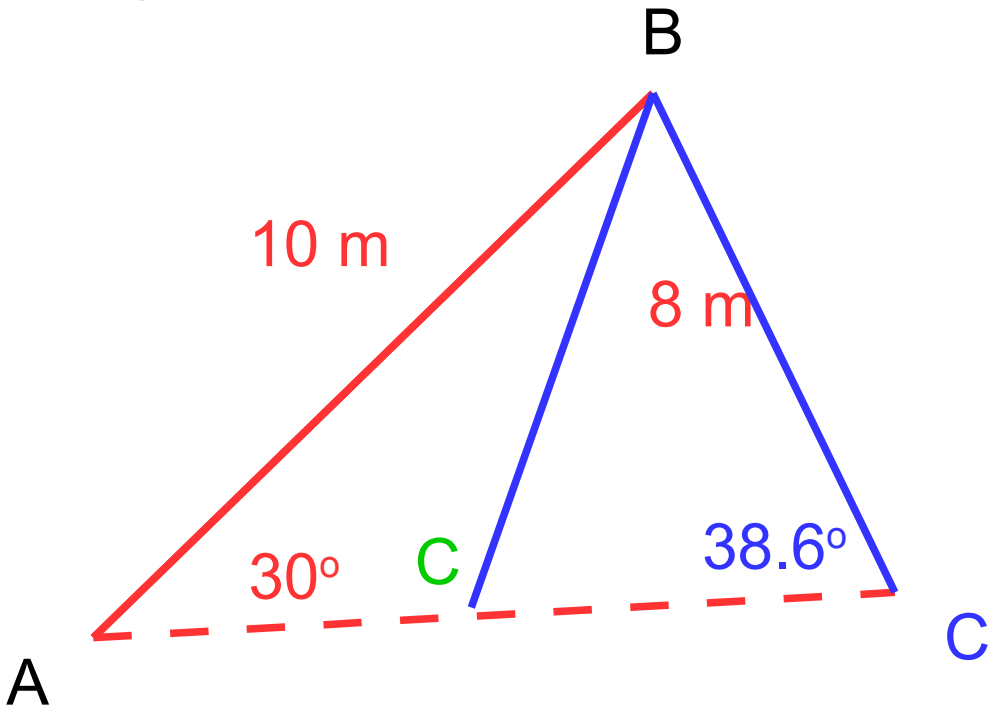
What is angle C?

There is ANOTHER Possible triangle with the same side c and angle A locked in

What changes is the angle C and B

This second triangle is called the AMBIGUOUS case

Question: How do we find the second triangle?



What is angle C?

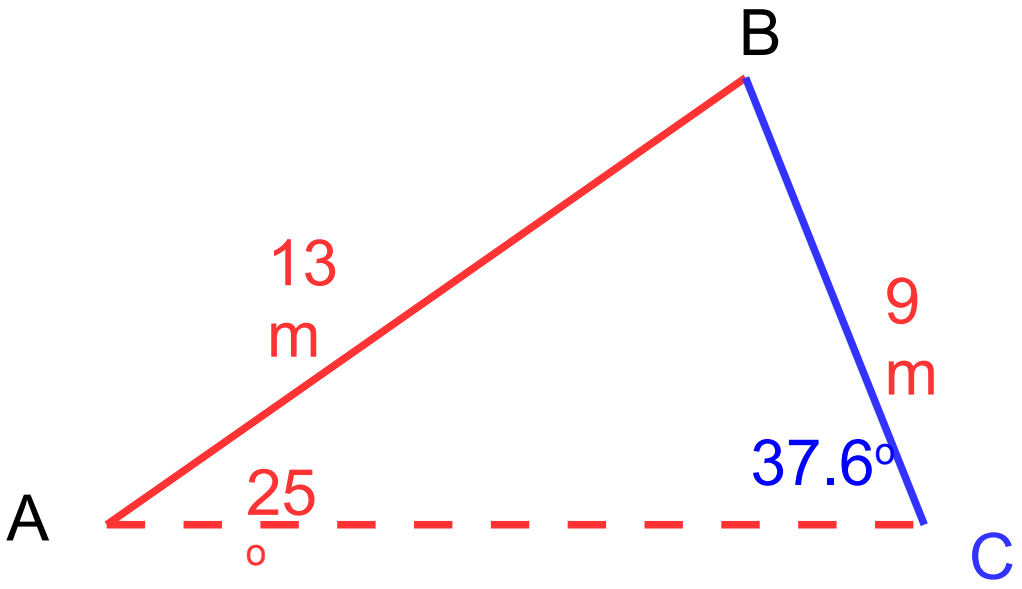
-- the calculator just gave us ONE answer (38.6°).
-- how do we find the other Angle?

180 – 38.6 = the other possible angle for C

The other angle for C is 141.4°

Consider the following triangle:

-- Find both possibilities for angle C

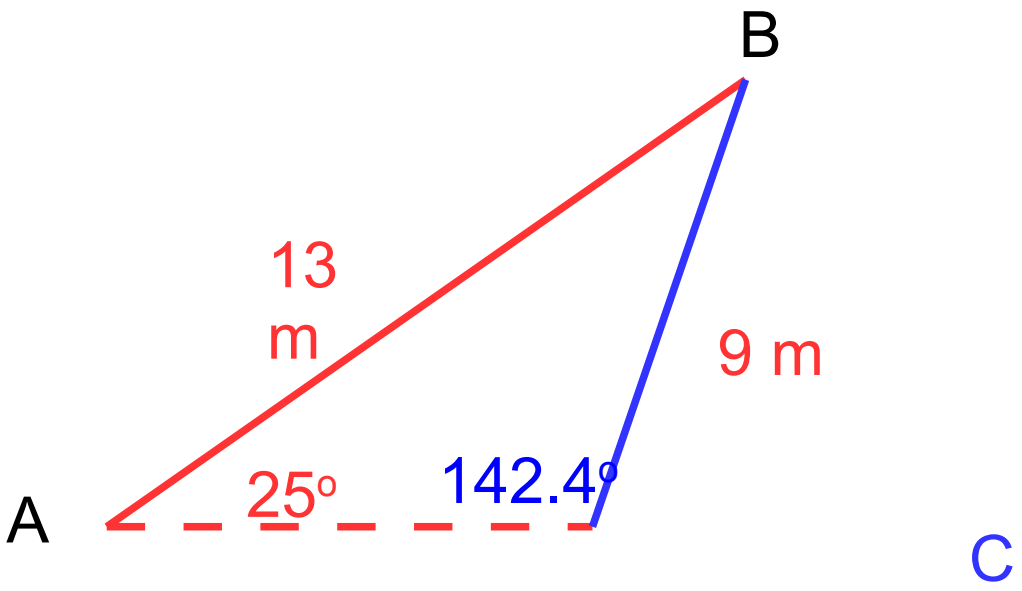


SinC / 13 = Sin(25) / 9
SinC = 13 x Sin(25) / 9
SinC = 0.610

C = 37.6°

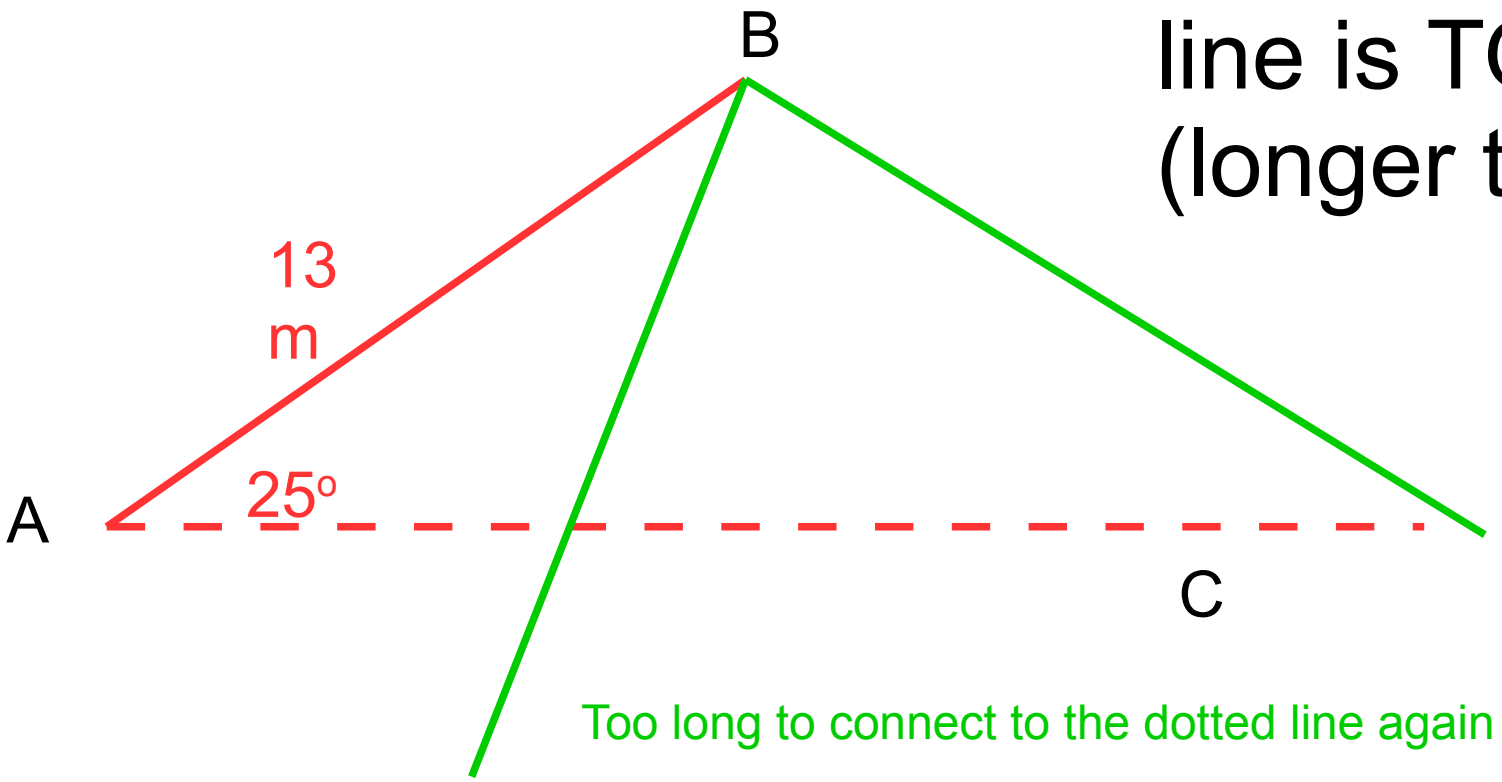
Consider the following triangle:

-- The second triangle



New C = 180 – 37.6° = 142.4°

There is NOT always an ambiguous case

When?

When the green line is TOO long (longer than 13)