Constructing a Unique or Special Triangle part 4

GIVEN ONE SIDE AND TWO ANGLES

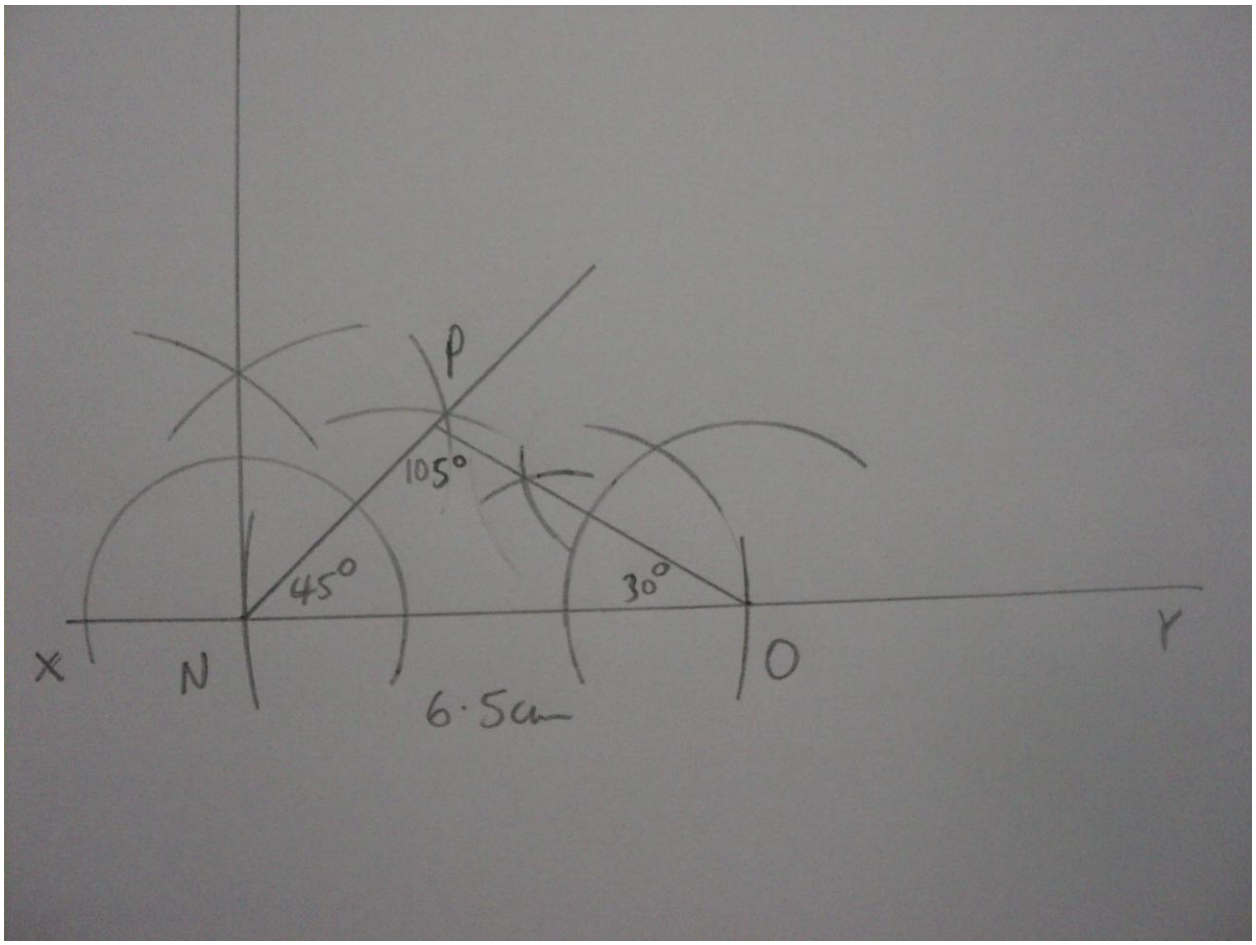
(a) Using rulers and compasses only, construct the triangle NOP, with NO =6.5 cm, angle N=45˚ and angle O=30°

Show all construction lines clearly.

(b) Measure and state the magnitude of angle NPO.

CONSTRUCTION:

First draw a line XY and then construct or build the line segment NO =6.5 cm. Use N as centre and construct the 45˚ angle on the right-hand-side. Draw a straight line passing through the point N and the 45˚ angle. At this moment use O as centre and construct a 30˚ angle on the left-hand-side. Draw a straight line passing through the point O and the 30˚ angle to intersect the last line at P. Hence we have in conclusion constructed the triangle NOP, with NO =6.5 cm, angle N =45˚ and O =30˚.



By measurement the size of NPO is 105°