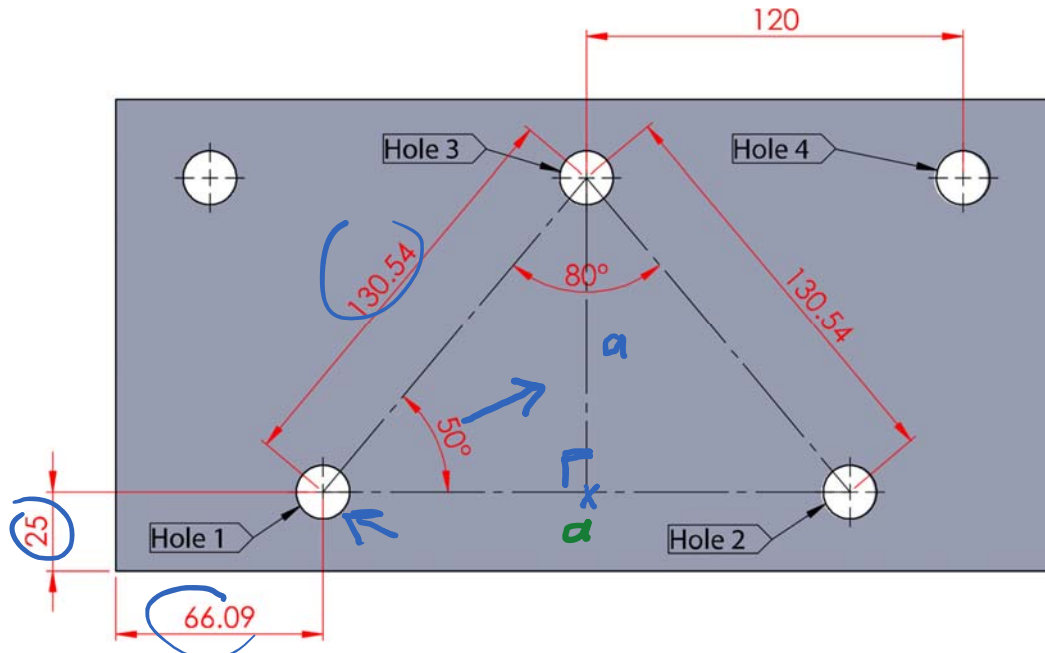


3- Fill out the below table with the absolute  $x$  and  $y$  coordinates for each hole shown in the Figure.

Hint: use Trigonometric functions to find the  $x$  and  $y$  coordinates of hole 3 and use Law of Cosines to find the  $x$  coordinate of hole 2.

Show all work [Grade: /20]



HOLE	$x$	$y$
1	66.09	25
2	168 + 66.09	25
3	84 + 66.09	25 + a = 125
4	66.09 + 84 + 120	25 + 100

$$\sin(50^\circ) = \frac{a}{130.54} \Rightarrow a = 130.54 \times \sin(50^\circ) = 100$$

$$\cos(50^\circ) = \frac{b}{130.54} \Rightarrow b = 130.54 \times \cos(50^\circ) = 83.9 \approx 84$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$= (130.54)^2 + (130.54)^2 - 2(130.54 \times 130.54) \cos(80^\circ)$$

$$a^2 = 28163 \Rightarrow a = \sqrt{28163} = 167.81$$