

Special Problem

Point A has coordinates of N=1000 E=1000.

Point B has coordinates of N=500 E=1100.

Point C has coordinates of N=300, E= 500.

You set up a theodolite (like a total station) at Point X. Sighting A and then turning an angle to B, you find that the angle is $58 \text{ deg } 40'17''$. Sighting B and then turning an angle to C, you find that the angle is $82 \text{ deg } 14'05''$. Sighting C and then turning an angle to A, you find that the angle is $219 \text{ deg } 05'38''$.

What are the coordinates of Point X?