ASSIGNMENT-2

UNNATI GUPTA

Download all python codes from

https://github.com/unnatigupta2320/Assignment−2/tree/master/codes

and latex-tikz codes from

https://github.com/unnatigupta2320/Assignment−2/tree/master

1 Question No. 2.36

Construct a quadrilateral MIST where $MI = 3.5, IS = 6.5, \angle M = 75°, \angle I = 105°$ and $\angle S = 120°$.

2 SOLUTION

For this quadrilateral adjacent side lengths $MI = 3.5, IS = 6.5$ and angles, $\angle M = 75°, \angle I = 105° and \angle S = 120°$.
Also, $\angle M = 75° and \angle I = 105°$,
$where \angle M + \angle I = 75° + 105° = 180°$,
$\implies MT || IS$ (MI being the transversal)
As, sum of adjacent angle on same side is 180°only when lines are parallel.
Now, considering ST as another transversal on parallel lines MT and IS , then
$\angle S + \angle T = 180°$,(angles on same side of transversal)

$\implies 120° + \angle T = 180°;$
$\implies \angle T = 180° - 120°;$
$\implies \angle T = 60°;$
Now taking sum of all the angles given $and \angle T$, we get
$\implies \angle M + \angle I + \angle S + \angle T$
$\implies 75° + 105° + 120° + 60°,$
$\implies 360°;$
So construction of given quadrilateral is possible as sum of all the angles is equal to 360°.
Now,On constructing the given quadrilateral we, get:

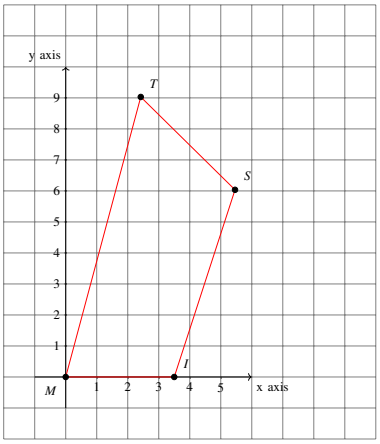

Fig. 2.1: Quadrilateral MIST