Fixed and variable costs for four potential plant locations are shown below:

Plant Location	Fixed Cost Per Year ($)	Variable Cost Per Unit ($)	$TC = FC + QV$		
A	250,000	15	400000		
B	150,000	24	390000		
C	120,000	30	420000		
D	200,000	28	480000		

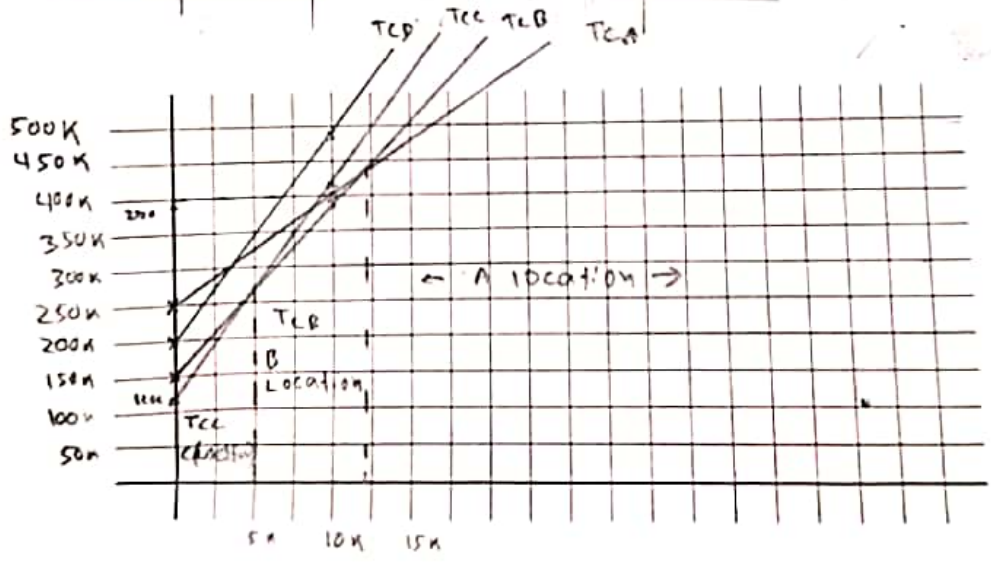
i) Plot the total-cost lines for these locations on a single graph.

ii) Identify the range of output for which each alternative is superior (i.e., has the lowest total cost).

iii) Which location would provide the lowest total cost at a volume requirement of 10,000 units?

(iii) Location B would provide the lowest total cost

Q	TC_A	TC_B	TC_C	TC_D
0	250000	150000	120000	200000
10000	400000	390000	420000	~~380000~~ 480000



C location — 0 to 5K

B location — 5K to 12K

A location — 12K to ∞

fig: quantity vs Total cost graph