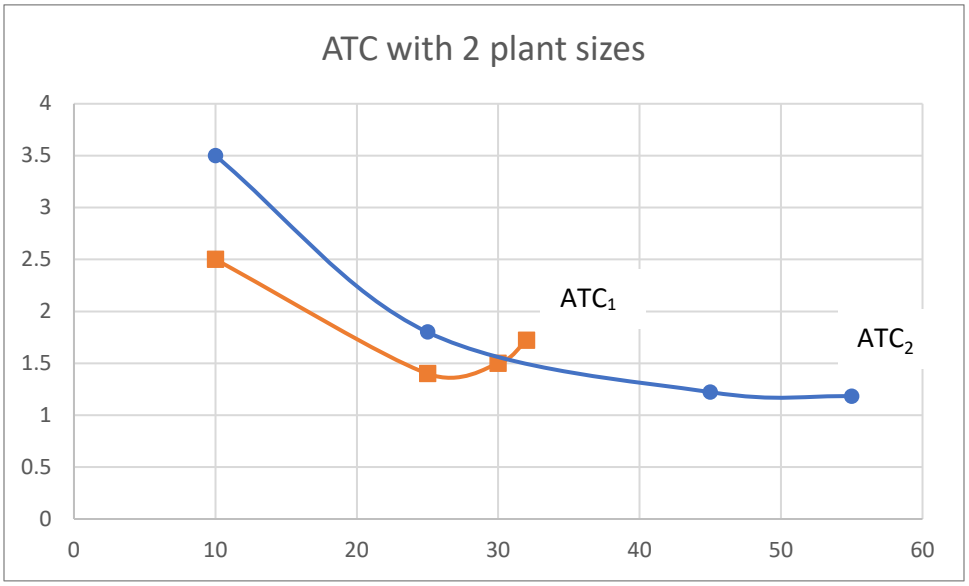
Long Run Costs & Production **Name**_____

In the long run, firms can make decisions on "scale" (change the fixed inputs of capital and labor). Suppose that the glove production plant size is changed to allow for ***3*** writing utensils (change to capital goods), and ***2*** desk areas (change to land input).

Suppose costs of inputs do not change, so labor costs $10/person, capital $5/writing utensil, and land $5/desk, and assume new production as specified below.

Labor	Output (Q)	Marginal Product (MP)	Total Variable Cost (TVC)	Total Fixed Cost (TFC)	Total Cost (TC)	Marginal Cost (MC)	Average Total Cost (ATC)	Average Variable Cost (AVC)
0	0	---	$0	$25	$25	---	---	---
1	10	10	10	25	35	$1	$3.5	$1
2	25	15	20	25	45	0.67	1.8	0.8
3	45	20	30	25	55	0.5	1.22	0.67
4	55	10	40	25	65	1	1.18	0.73

Consider the new ATC (ATC_2) with the expanded plant capacity and the original ATC (ATC_1) curves below:



1. If this firm wanted to produce 32 gloves at the lowest average cost per unit, should the firm operate at its original plant capacity or its new plant capacity?

2. If this firm wanted to produce 20 gloves at the lowest average cost per unit, should the firm operate at its original plant capacity or its new plant capacity?

3. To produce at the lowest average cost per unit, at what quantity should the firm switch from the original plant capacity to the new plant capacity?

4. Add the long run ATC curve on the graph above.

5. If this firm increased production from 10 to 50 gloves, does this firm experience economies of scale?