Answer on Question #54393, Economics / Economics of Enterprise

Question:
A firm produces the following units of output, Q, by hiring a fixed quantity of capital, K, and labour, L, as follows:
L: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80
Q: 16, 36, 65, 97, 137, 177, 209. 233, 249, 257
APL: 0.50, 0.44, 0.37, 0.33, 0.29, 0.27, 0.27, 0.27, 0.29, 0.31
MPL: - , 0.40, 0.28, 0.25, 0.20, 0.20, 0.25, 0.33 , 0.55 , 1.00
a. Assuming that the cost of capital is $1,000 and labour costs $10.00 per hour, determine the total variable cost, average variable cost and the marginal cost of the firm for the output levels given above.
b. Provide rough graphs of the TVC, AVC and MC curves and compare their behaviour with the product curves in part b. Be sure to label your axes correctly.

Answer:
TFC = 1,000, TVC = 10*L, AVC = TVC/Q, TC = TFC + TVC, MC = ΔTC/ΔQ

L	Q	APL	MPL	TFC	TVC	AVC	TC	MC
8	16	0,5		1000	80	5	1080	
16	36	0,44	0,4	1000	160	4,44	1160	4
24	65	0,37	0,28	1000	240	3,69	1240	2,76
32	97	0,33	0,25	1000	320	3,30	1320	2,5
40	137	0,29	0,2	1000	400	2,92	1400	2
48	177	0,27	0,2	1000	480	2,71	1480	2
56	209	0,27	0,25	1000	560	2,68	1560	2,5
64	233	0,27	0,33	1000	640	2,75	1640	3,33
72	249	0,29	0,55	1000	720	2,89	1720	5
80	257	0,31	1	1000	800	3,11	1800	10