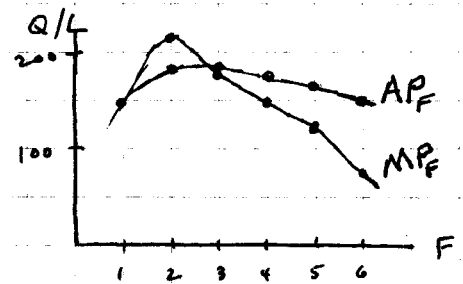
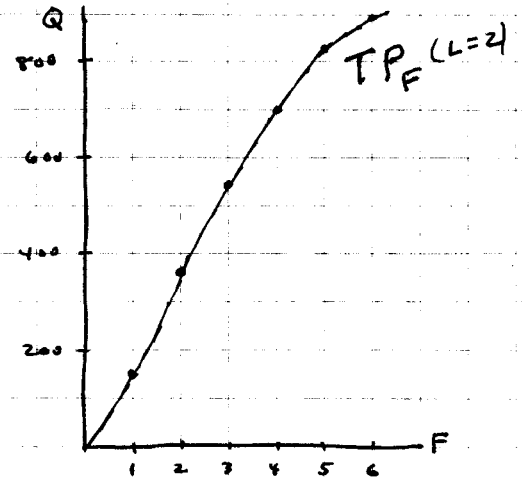


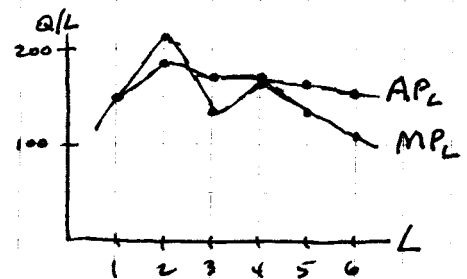
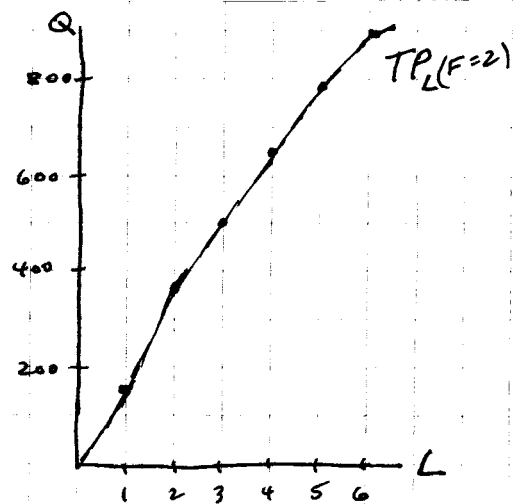
1. (a) Acres of land = 2

Fertilizer	$TP_F$	$MP_F$	$AP_F$
1	150	150	150
2	370	220	185
3	550	180	183.3
4	700	150	175
5	825	125	165
6	900	75	150



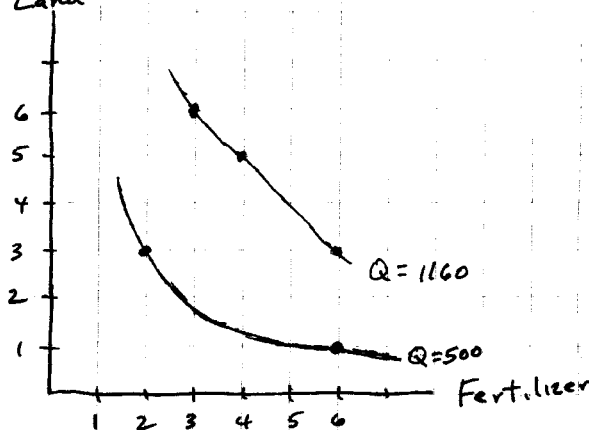
(b) Fertilizer = 2 tons

Land	$TP_L$	$MP_L$	$AP_L$
1	150	150	150
2	370	220	185
3	500	130	166.6
4	660	160	165
5	790	130	158
6	900	110	150



Note: there are a couple of types in the table that cause the  $TP_L$  and  $MP_L$  curves in (b) to behave strangely. Same thing for the  $Q=1160$  isoquant in (c).

(c) Land

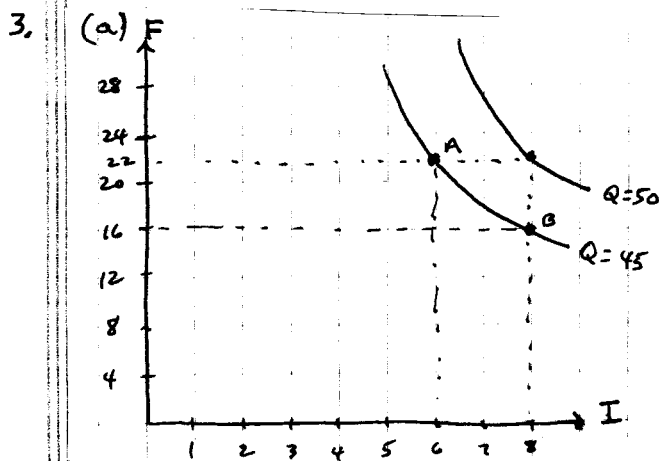


2.  $F=1, L=1, Q=50$  > increasing returns to scale  
 $F=2, L=2, Q=370$

$F=2, L=2, Q=370$  > increasing returns to scale  
 $F=4, L=4, Q=1060$

$F=3, L=3, Q=740$  > decreasing returns to scale  
 $F=6, L=6, Q=1330$

Returns to scale are at first increasing and then decreasing.



(b)  $MRTS_{I,F} = \frac{\Delta F}{\Delta I} \Big|_{\bar{Q}}$   
 if  $Q=45$ , between input combinations A and B:  
 $\Delta F = 6$  and  $\Delta I = 2$ ,  
 6 lbs fertilizer  
 so  $MRTS_{I,F} = \frac{2 \text{ quarts insecticide}}{1}$

4.  $Q = L^{1/2} K^{1/2}$   
 $Q=10 \Rightarrow L^{1/2} K^{1/2} = 10$   
 $L \cdot K = 100$

L	1	2	4	5	8	10
K	100	50	25	20	12.5	10

