ECO135 (1) Chapter 2 HW Questions & Answers

4.

	Meghan		Kate	
	Wristbands (W)	potholder (P)	W	P
Output per hour	16	4	15	3
time/unit (min.)	$= 60^{min}/_{16\ one}$	$= 60/4$	$= 60/15$	$= 60/3$
	$= 3.75$ min.	$= 15$	$= 4$	$= 20$
Opportunity cost/unit	$= 3.75/15$	$= 15/3.75$	$= 4/20$	$= 20/4$
	$= 0.25P$	$= 4W$	$= 0.2P$	$= 5W$

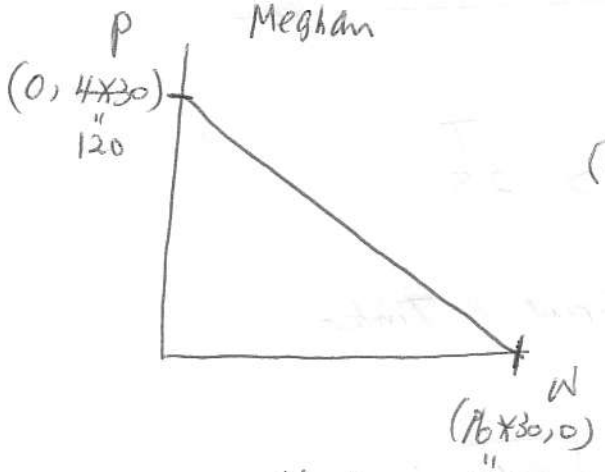
a.b Comparative advantage (C.A.)

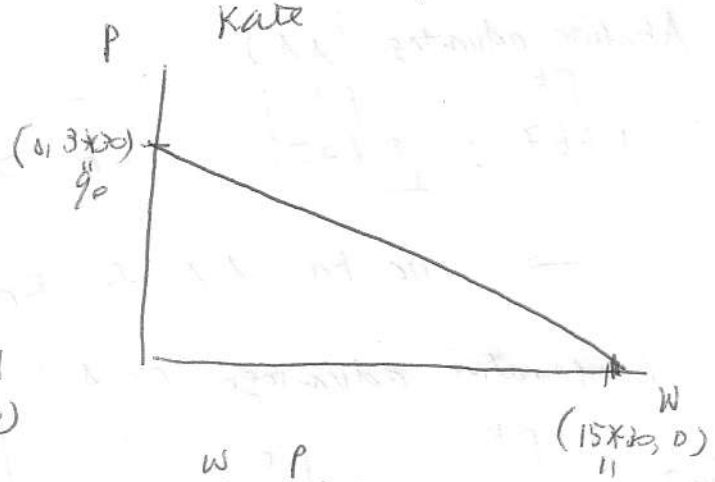
$0.25P > 0.2P \Rightarrow$ Kate has C.A for W (lower O.C.)

$4W < 5W \Rightarrow$ Meghan has C.A. for P (lower O.C.)

$=$ O.C(P) for Meghan; $=$ O.C(P) for Kate

c. Works 30 hrs/week





d. Meghan (15, 15) hours — Kate (15, 15) hours

$W^M = 15*16 = 240$ — $W^K = 15*15 = 225$

$P^M = 15*4 = 60$ — $P^K = 15*3 = 45$

e. Meghan (5, 25) — Kate (30, 0)

$W^M = 5*16 = 80$ — $W^K = 30*15 = 450$

$P^M = 25*4 = 100$ — $P^K = 0$

f. $P_W = \$1.20$, $P_P = \$6$

Meghan (0 W, 30 P hours), Kate (30 W, 0 P hours)

$P^M = 30 * 4 = 120$ $\quad P^K = 0$

$W^M = 0$ $\quad W^K = 30 * 15 = 450$

$450 * 1.20 + 120 * 6 = \underline{\underline{1260}}$

6. Labor force = 1500 each.

Kanmar

	Fruit (F)	Timber (T)	Cova F	Cova T
One worker for one month = 30 days	18	6	48	12
time/unit (days)	$= 30^{\text{days}}/_{18F}$ $= 1.667$ days	$= 30/6 = 5$ days	$= 30/48 = 0.625$ days	$= 30/12 = 2.5$ days
Opportunity cost/unit	$= 1.667/5 = 0.3334\ T$	$= 5/1.667 = 2.999\ F$	$= 0.625/2.5 = 0.25\ T$	$= 2.5/0.625 = 4F$

a. Absolute advantage (A.A.)

time/unit: $F^K\ 1.667 > F^C\ 0.625$ $\quad T^K\ 5 > T^C\ 2.5$

→ Cova has A.A. for Fruits & Timber

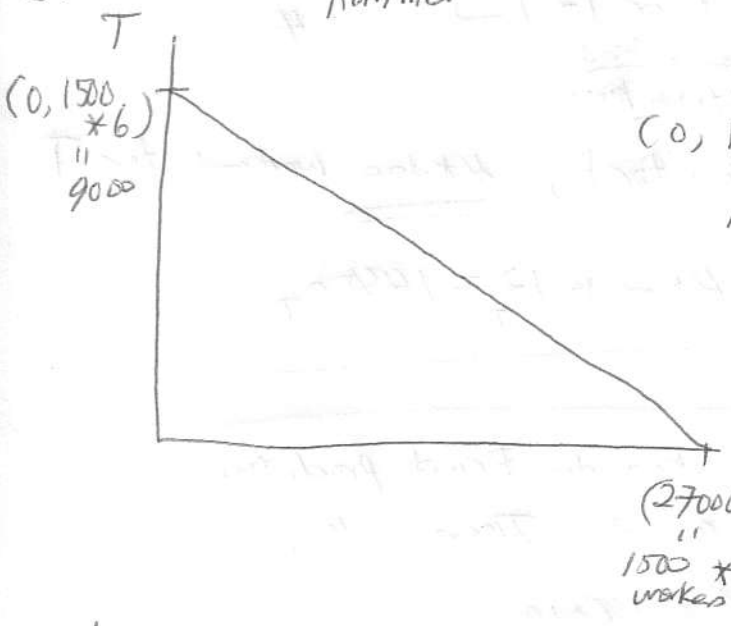
b. Comparative advantage (C.A.)

O.C/unit: $F^K\ 0.3334\ T > F^C\ 0.25\ T$ $\quad T^K\ 2.999\ F < 4\ T^C\ F$

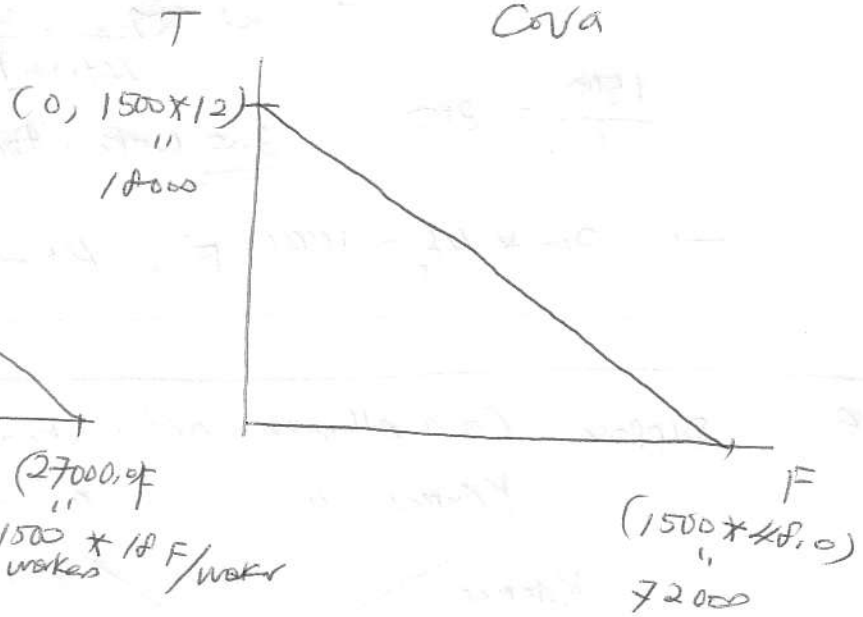
Cova has C.A for Fruits

Kanmar has C.A. for Timber.

c. Kanmer



Cova



d. No trade

1st approach – Derive PPF function from.

$T = a - bF$

$a = 9000$ from c., X intercept = (27000, 0)

$0 = 9000 - 27000b$

$b = 1/3$

$\Rightarrow$ $\boxed{T = 9000 - \frac{1}{3}F}$ for Kanmer

Since we want $T = F$

$T = 9000 - \frac{1}{3}T$

$\frac{4}{3}T = 9000$

$\boxed{T = 6750 = F}$

for cova

$a = 18000$, X-intercept $(72000, 0)$

$0 = 18000 - 72000b$

$b = \frac{1}{4}$

$\boxed{T = 18000 - \frac{1}{4}F}$

Since we want $T = F$,

$T = 18000 - \frac{1}{4}T$

$\frac{5}{4}T = 18000$

$T = 14400 = F$

2nd approach – Compare productivity of each worker

Kanmer – A worker can produce 18 F or 6 T. → allocate the worker 1 : 3

(3 times more)

$\frac{1500 \text{ workers}}{4} = 375$.

375 workers for F, 375 * 3 workers for T.

$\begin{cases} F^K = 375 * 18 = 6750 \\ T^K = 375 * 3 * 6 = 6750 \end{cases}$

Cov9 One worker can produce 48 F or 12 T → Allocate labor 1 : 4 (4)

4 times more

$\frac{1500}{5} = 300.$

300 workers for F, 4*300 workers for T

→ $300 * 48_F = 14400_F$, $4*300 * 12_T = 14400_T$

e. Suppose Kanmer allocates all workers to Tinc product (5)

Cova " 375 workers to Fruits & 1125 workers to Timber

✳ If I ask you in the exam about "gains from Trade" I'll give you Kanmer's & Cova's specific exchange rate & resource allocation.

	F	T	F	T
#workers	0	1500	375	1125
production	0	=1500 * 6 = 9000	=375 * 48 = 18000	=1125 * 12 = 13500
exchange rate		1500 T → 5000 F		
After trade	5000	7500	13000	15000

Since PPF for Kanmer

$T = 9000 - \frac{1}{3}F$

on PPF, if $F = 5000$

$T = 7333.33$

But now, it's 7500.

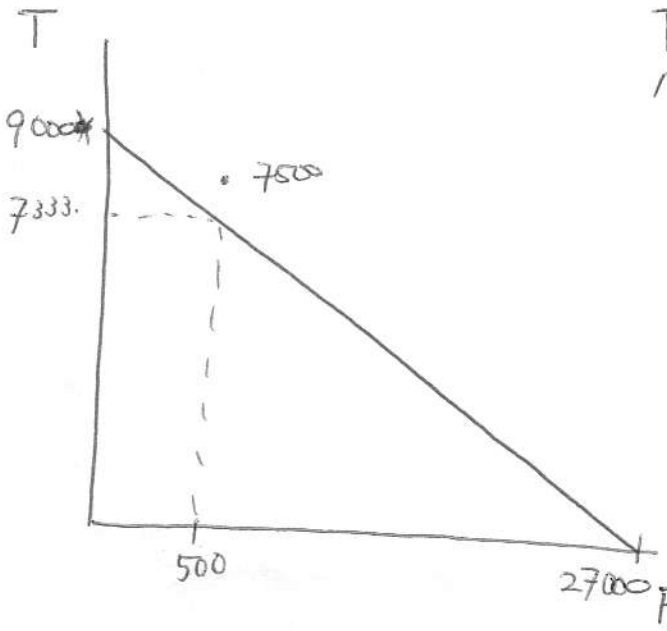
Since PPF for Cova

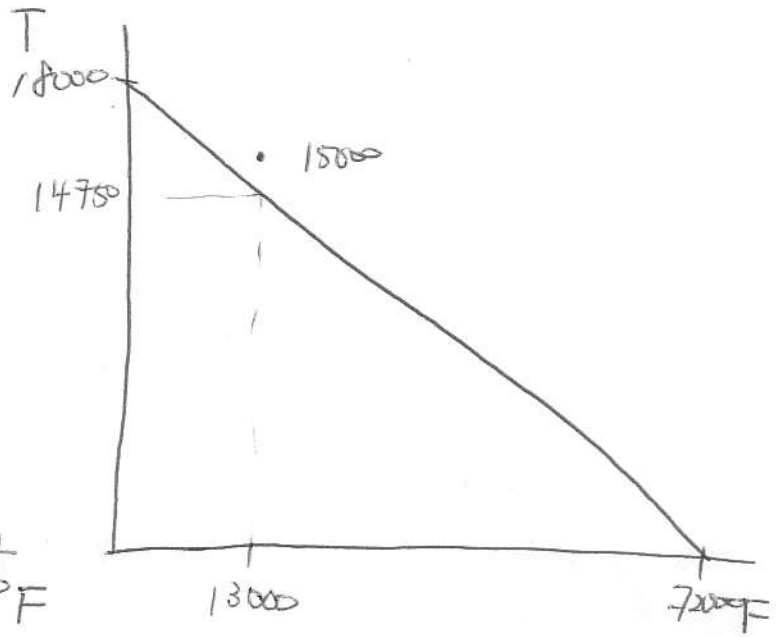
$T = 18000 - \frac{1}{4}F$

on PPF, if $F = 13000$

$T = 14750$

But now it's 15000.





Note: In the quizzes exams, exchange rate & allocation of labor will be given. No need to derive by yourself.

8. a. c, ~~[redacted]~~

b. a, b, d, e, f ← On or above PPF

c. d, e

d, e

e b, c, d, e, f

f, b.

↑ production inefficiency

(6)