Sum 1:

Kristen and Anna live in the beach town of Santa Monica. They own a small business in which they make wristbands and pot holders and sell them to people on the beach. As shown in the table on the following page, Kristen can make 15 wristbands per hour but only 3 pot holders. Anna is a bit slower and can make only 12 wristbands or 2 pot holders in an hour.

	OUTPUT PER HOUR	
	WRISTBANDS	POT HOLDERS
Kristen	15	3
Anna	12	2

a. For Kristen and for Anna, what is the opportunity cost of a pot holder? Who has a comparative advantage in the production of pot holders? Explain your answer.

b. Who has a comparative advantage in the production of wristbands? Explain your answer.

c. Assume that Kristen works 20 hours per week in the business. Assuming Kristen is in business on her own, graph the possible combinations of pot holders and wristbands that she could produce in a week. Do the same for Anna.

d. If Kristen devoted half of her time (10 out of 20 hours) to wristbands and half of her time to pot holders, how many of each would she produce in a week? If Anna did the same, how many of each would she produce? How many wristbands and pot holders would be produced in total?

e. Suppose that Anna spent all 20 hours of her time on wristbands and Kristen spent 17 hours on pot holders and 3 hours on wristbands. How many of each item would be produced?

f. Suppose that Kristen and Anna can sell all their wristbands for $1 each and all their pot holders for $5.50 each. If each of them worked 20 hours per week, how should they split their time between wristbands and pot holders? What is their maximum joint revenue?

Sum 2:

The countries of Figistan and Blah are small island countries in the South Pacific. Both produce fruit and timber. Each island has a labor force of 1,200. The following table gives production per month for each worker in each country.

	BASKETS OF FRUIT	BOARD FEET OF TIMBER
Figistan workers	10	5
Blah workers	30	10

Productivity of one worker for one month

a. Which country has an absolute advantage in the production of fruit? Which country has an absolute advantage in the production of timber?
b. Which country has a comparative advantage in the production of fruit? of timber?
c. Sketch the ppf's for both countries.
d. Assuming no trading between the two, if both countries wanted to have equal numbers of feet of timber and baskets of fruit, how would they allocate workers to the two sectors?
e. Show that specialization and trade can move both countries beyond their ppf's.

SUPPLEMENTARY ANSWER BOOK

ID No. _____ Course No. _____

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Start Writing from here :-

a) and b)

	Output per hour	
	Wristbands	Potholder
Kristen	15	3
Anna	12	2

Opportunity cost for Kristen (opportunity cost for wristband)

$$15 \longrightarrow 3$$
$$1 \longrightarrow \frac{3}{15} = .2$$

Opportunity cost for potholder.

$$3 \longrightarrow 15$$
$$1 \longrightarrow \frac{15}{3} = 5$$

[Kristen has ~~opportunity cost~~ comparative advt in making pot holders and Anna in wristband]

Opportunity cost for Anna (Opportunity cost for wristban)

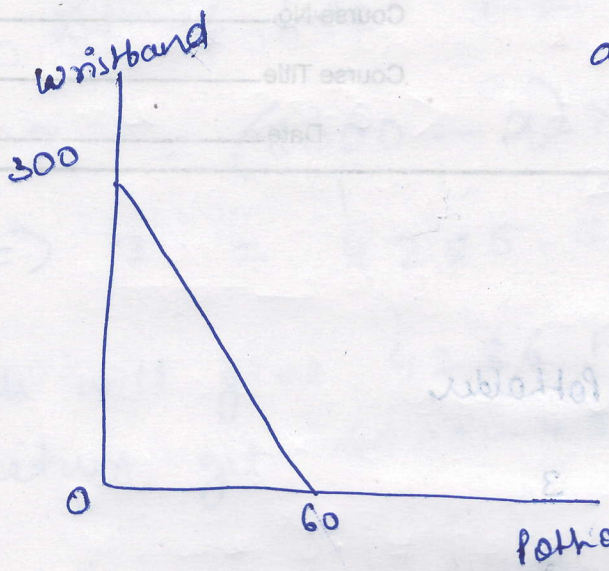
$$12 \longrightarrow 2$$
$$1 \longrightarrow \frac{2}{12} = .166$$

for pot holder

$$2 \longrightarrow 12$$
$$1 \longrightarrow \frac{12}{2} = 6$$

c) Kristen works 20 Hours per week

Kristen



1 Hour → 15 wristbands

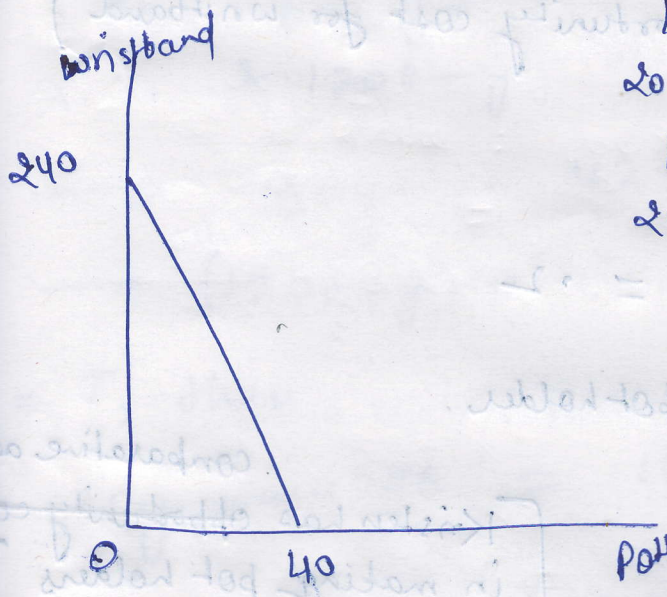
20 Hour → 15 × 20 = 300

and

1 Hour → 3 potholders.

20 Hour → 20 × 3 = 60 potholders

for Anna



1 Hour → 12 wristband.

20 Hour → 12 × 20 = 240

1 Hour → 2 wristband.

20 Hour → 20 × 2 = 40

duction: F = 4286 + 9214 = 13500 &

d).

Kriten.

1 Hour → 15 WB.

10 Hour → 150 WB.

1 Hour → 3 PH

10 Hours → 30 PH.

Anna

1 Hour → 12 WB

10 Hour → 120 WB.

1 Hour → 2 PH.

10 Hour → 20 PH.

Total. 150 + 120

= 270 WB

30 + 20.

= 50 PH

e) Anna

240 Wristband

Kriten

1 Hour ~~=~~ 3 PH

17 Hour 17 X 3 = 51 PH.

1 Hour 15 WB.

3 Hour 45 WB

Wristband = 240

+ 45 WB.

= 285 WB and 51 PH.

Potholder 51 ₹.

f. Kristern — Pot holders

If she produces one Pot holders, she gets $5.5

But when she produces one pot holder, she does not produce 5 wristbands. which costs $5 \times 1 = \$5$

Since $\$5.5 > \$5$, all time to pot holders by kristern

Anna — Wrist band

If she produces one wristband, she gets $1.

But when she produces one WB, she does not produce 0.17 PH, which costs $0.17 \times 5.5 = \$0.935$

Since $\$1 > \$0.935$, all time to wristbands by Anna

∴ Total revenue: $(60 \times 5.5) + (240 \times 1)$

$= 330 + 240 = \$570$

2) One worker for one month

	Fruit	Timber
Figi	10	5
Blah	30	10

a) Absolute advantage — both with Blah (as $30 > 10$ & $10 > 5$)

b) Fruit: figi: $10\,F \text{ —— } 5\,T$

$1\,F \text{ — } \frac{5}{10} = 0.5\,T$

Blah $30\,F \text{ — } 10\,T$

$1\,F \text{ — } \frac{10}{30} = 0.33\,T$

∴ Blah has comparative advantage in production of fruit

Timber: figi $\begin{cases} 5\,T \text{ —— } 10\,F \\ 1\,T \text{ — } \frac{10}{5} = 2\,F \end{cases}$

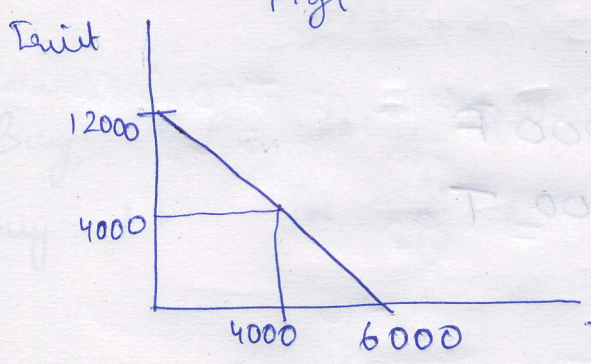
Blah: $10\,T \text{ — } 30\,F$

$1\,T \text{ — } \frac{30}{10} = 3\,F$

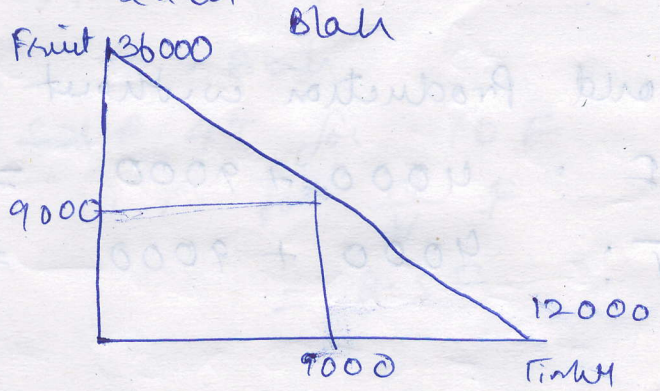
∴ Figi has comparative advantage in production of timber

c) Resource: 1200 workers each

Figi



Blah



d) Both contries want to produce equal number of F & T.

Fiji : Fruit : Timber

10 : 5

∴ 2 : 1

∴ Labour 1 : 2

∴ $\frac{1200}{3} = 400$ ∴ 400 Labour for fruit
800 Labour for timber

∴ $400 \times 10 = 4000$ F

$800 \times 5 = 4000$ T

Blah : Fruit : Timber

30 : 10

3 : 1

∴ Labour 1 : 3

∴ $\frac{1200}{4} = 300$ ∴ 300 labour for fruit
900 labour for timber

∴ ~~400~~ $300 \times 30 = 9000$ F

$9000 \times 10 = 9000$ T

World Production without trade

F : $4000 + 9000 = 13000$ F

T : $4000 + 9000 = 13000$ T

e) Comparative advantage : Blah ⟶ F
Figi ⟶ T.

If to fully specialize :

Blah ⟶ 36000 F & 0 T

Figi ⟶ 0 F & 6000 T

∴ Total production of F increases as 36000 > 13000

But for T, it decreases as 6000 < 13000

∴ Blah should produce some timber as well.

So, lets start with Figi who produces only 6000 T & figi will buy fruits

What Figi is willing to pay for 10 F at max?

5 T

What is the minimum that Blah is ready to accept for 10 F ? $\frac{10}{3}$ T

So terms of trade should be anything between

$\frac{10}{3}$ T ——— 5 T.

We take 10 T as 4 T

Figi

Buy 10 F for 4 T

Buy 1 F for $\frac{4}{10}$ T

Blah

~~Sell~~ 4 T for 10 F

1 T for $\frac{10}{4}$ F

= 2.5 F

Assume after trade, ~~Figi & Blah they~~ countries consume equal quantities of F & T

~~Let~~

Figi : Let us take $F = T = x$

$$x = (6000 - x) \times 2.5$$

$$\Rightarrow x = 4285.7 \simeq 4286$$

∴ Blah will give 4286 F to Figi and in return get $6000 - 4286 = 1714$ T from Figi

Blah : Now Blah produces both F & T

Let Blah put y labourers to F production

& $1200 - y$ " to T "

$$F \longrightarrow 30y - 4286$$

$$T \longrightarrow (1200 - y)10 + 1714$$

If $F = T$, then

$$30y - 4286 = 10(1200 - y) + 1714$$

$$\Rightarrow 40y = 18000$$

$$\Rightarrow y = 450$$

∴ 450 labourers to F & $1200 - 450 = 750$ labours for Simbri.

∴ $F = (30 \times 450) - 4286 = 9214$

$T = (750 \times 10) + 1714 = 9214$

World production : $F = 4286 + 9214 = 13500$ & $T = 13500$