

Practice problem on comparative advantage with answer:

The following table shows the hours needed to produce fish and rice for two initially isolated people, Kim and Chang. Show that the two can gain from exchange and specialization. Be sure to identify which person specializes in producing which product.

| Person | Hours needed to produce a <u>kilo of fish</u> | Hours needed to produce a <u>kilo of rice</u> |
|--------------|---|---|
| <u>Kim</u> | 5 | 12 |
| <u>Chang</u> | 3 | 4 |

Answer:
(Part 1)

| Person | Hours needed to produce a <u>kilo of fish</u> | Hours needed to produce a <u>kilo of rice</u> | Physical opportunity cost of producing a <u>kilo of fish</u> | Physical Opportunity cost of producing a <u>liter of rice</u> |
|--------------|---|---|--|---|
| <u>Kim</u> | 5 | 12 | 5/12 kilo of rice | 12/5 kilo of fish |
| <u>Chang</u> | 3 | 4 | 3/4 kilo of rice | 4/3 kilo of fish |

(Part 2)

The box shows that Kim has the lowest physical opportunity cost of producing rice while Chang has the lowest physical opportunity cost of producing fish. Now suppose that Kim shifts 5 hours away from producing rice. He would gain one kilo of fish and lose 5/12 kilo of rice. We now suppose further that Chang shifts just enough time away from fish so that he gives up a kilo of fish. How much rice could he produce. Chang would save three hours. Since it takes her 4 hours to produce a kilo of rice, we see that she would gain 3/4 kilo of rice. Together Kim and Chang produce the same amount of fish. The additional rice is $3/4 - 5/12 = 4/12 = 1/3$ kilo of rice. The table below shows the change:

| | <u>Kim</u> | <u>Chang</u> | <u>Net Change</u> |
|----------------|------------|--------------|-------------------|
| Change in fish | +1 | -1 | no change |
| Change in rice | -5/12 | +3/4 | +1/3 |