(a) Which one or more of the standard PPF assumptions discussed in class do(es) not apply to the following PPF?
(b) Explain why in detail.

Note: The attainable area is shaded. The non-attainable areas are blank.

(a) Both the assumptions of convexity and free disposal are violated.

(b) Convexity is violated because even though points A + B are attainable, points such as C, D on the straight line between A + B are not.

Free disposal is violated because you can produce at points such as E, F, G that lie to the North East of the non-attainable area. If you had free disposal you could produce combinations of Butter + Milk inside the circle by producing at E, F or G.
(2) (a) Explain the difference between positive and normative economics.

(b) Classify the following statements as either positive or normative. Remember to state your reasons in each case.

(i) Beef prices have fallen as a result of the decreased demand for beef due to the mad cow disease health scare.

(ii) The Fed should cut interest rates because this will result in lower mortgage rates and everyone in America should have the right to buy their own home.

Answer:
(a) Positive Economics is based on statements of fact & logical deductions while Normative Economics is based on statements about what should be (value judgments)

(b) (i) is a positive statement because it may be tested by collecting data and examining the claim that during mad cow disease outbreaks beef prices tend to fall.

(ii) is a normative statement about the way things ought to be. It is a value judgement.
(3) An economist hired by the Ford motor company theorizes that the price of a new car depends on the cost of production and the profit margin per car.

Identify the endogenous and the exogenous variables in the above model. A schematic diagram is provided for your convenience.

ANSWER:

An endogenous variable is a variable that is explained by the theory. It is also called a dependent or response variable. In this case, price is an endogenous variable.

An exogenous variable influences endogenous variables but is itself determined by factors outside the theory. It is also called an independent or causal variable. Cost of production and profit margin are exogenous variables.
(4) From the figure below:
(a) Calculate the per unit opportunity cost of a sedan in terms of sportscars as you move from point A to point B.
(b) Calculate the per unit opportunity cost of a sedan in terms of sportscars as you move from point C to point D.
(c) As you move from left to right does the per unit opportunity cost of sedans increase or decrease? Explain why?
(d) What is the logic behind the shape of a bowed out PPF? Which shape of PPF (bowed in or bowed out) is more representative of real life factories? Why?

(a) \( A \rightarrow B \)
\[
\text{OC per Sedan} = \left| \frac{10 - 6}{1 - 3} \right| = 2 \text{ sportcars}
\]

(b) \( C \rightarrow D \)
\[
\text{OC per Sedan} = \left| \frac{5 - 4}{4 - 5} \right| = 1 \text{ sportcar}
\]

(c) As you move from left to right the per unit O.C. of sedans (in terms of sportscars) decreases. This is because the PPF is bowed in towards the origin.

(d) A bowed out PPF indicates increasing O.C. as you move from left to right. The bowed out shape is more realistic because the last sportscar workers are most likely to be the last ones assigned to sedan production.
Hence as more and more sedans are produced, the O.C. in terms of sportscars will increase as progressively better sportscar workers will be assigned to sedan production.

Income ↑ → DD for inferior good ↑

$P^* \uparrow$, $Q^* \uparrow$