1. You are a record producer. The single input you have at your disposal for a one-day recording session in a group of musicians. The musicians however are not all alike: some play the violin, others the guitar, others are singers and finally you have the DJs. As a producer, you are trying to decide how much to produce of two types of output: symphonies and house mixes. The maximum output you can get out of your musicians in a one-day session is as follows (don’t ask what house mixes with only violinists sound like):

<table>
<thead>
<tr>
<th>Musician:</th>
<th>violinists</th>
<th>singers</th>
<th>guitarists</th>
<th>DJs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symphonies</td>
<td>50</td>
<td>30</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>House mixes</td>
<td>40</td>
<td>80</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

a) **Draw** the production possibilities frontier (PPF) **Explain** the shape you have drawn (convex or concave?). Hint: if you put all your musicians on symphonies, you could have a total of 140 symphonies. Then you would start switching musicians around to get some house mixes …

b) Say you are producing only house mixes and you wish to start recording some symphonies.
   i) **In what order** would you re-assign musicians?
   ii) **Give** an intuitive explanation.

c) Say you are now producing (efficiently) 80 symphonies.
   i) **How many** house mixes are produced?
   ii) **What is the opportunity cost** of producing 10 more symphonies?
   iii) **Twenty** more symphonies?

1. Thinking about a different type of PPF: you are still in charge of musicians, but this time you are trying to decide how much or recordings and music lessons to produce. Think of recordings as the consumption goods (available immediately) and the music lessons as the investment goods (allowing your musicians to be able to produce more of both recordings and lessons the next time around).

a) **Draw** a concave PPF for today, and label it $PPF_0$: **Choose** (any) two points that curve and **label** them A and B.

b) On the same graph, **draw** a PPF curve for the next time you get together with your musicians, if you had chosen point A the first time around. Label it $PPF_a$. **Draw**
another one to show what would have happened if B had been chosen instead. Label that one PPFb.

c) **Explain** your graph. Why do you have three different curves?

1. Let’s look at the market for The North Face (TNF) clothes. First imagine the situation when only people who climb mountains are interested in these clothes. **Draw** a graph which clearly identifies the demand (D0) and supply (S0) curves. **Label** the axes, and **indicate** the equilibrium price (P0) and quantity (Q0). Then, for each of the situations described below, **use** a similar graph as a template and **show** any change to demand, supply, price and/or quantity. For example, if demand changes we should be able to see the old curve (D0) and the new one (D1). Same thing for supply, equilibrium price and quantity (S1, P1 and Q1). Repeat for each case.

Example: TNF clothes become fashionable among students.

**Answer:** Students will demand more TNF at all prices. Demand curve shifts right, increasing both equilibrium price and quantity.

![Graph showing demand and supply curves]

- a) TAs notice the fashion trend and start wearing TNF. Students avoid TNF like the plague.
- b) The cost of nylon-kevlar (or whatever they use for these clothes) goes down.
- c) A series of avalanches scares people (except the most suicidal) off climbing mountains.
- d) The City of Berkeley wants to help fashion-challenged Berkeley students and implement an effective (below equilibrium price) price ceiling (TNF clothes may not be legally sold above that price).
- e) TNF Corp. uses mind control to sell its stuff. People unlucky enough to have been hypnotized by the TNF marketing people will buy TNF clothes no matter what the price is (is their demand price elastic or inelastic?) Others will not touch TNF stuff.

1. Producers increase the price of pink golf balls in Sacramento from $1.25 to $1.75. This change in price reduces monthly sales from 100,000 to 40,000 units.

a) **What** is the arc elasticity of demand (use *average* quantity and price) in that range?

b) Would you guess the price rise was a good idea on the part of the producers? **Hint:** there is no right or wrong answer here, but you try to tell a short, coherent story by making some assumptions about why the price was raised.