

## Answer Guide for Production Possibilities Frontier Problem Set

The following table is a schedule for the production possibilities for a company that can produce textbooks or novels.

Production Alternatives					
Products	A	B	C	D	E
Novels	0	40	70	90	100
Textbooks	4	3	2	1	0

1. Graph the data above. Put **Novels** on the vertical axis and **Textbooks** on the horizontal axis. Make sure to label each point a-e. *[Check students' graph]*

2. The opportunity cost of increasing production of textbooks from 0 to 1 is the loss of **10** novels

3. The opportunity cost of increasing production of textbooks from 1 to 2 is the loss of **20** novels.

4. The opportunity cost of increasing production of textbooks from 2 to 3 is the loss of **30** novels.

5. The opportunity cost of increasing production of textbooks from 3 to 4 is the loss of **40** novels.

6. Explain why the answers from numbers 2 through 5 are different.

*[This is because the resources in the firm are not perfectly adaptable to the production of both types of goods. Each additional textbook that is produced requires the firm to give up successfuller larger amounts of novels- 10, 20, 30, then 40. This illustrates the law of increasing opportunity cost.]*

7. Suppose a new technology was increasing the efficiency of **novel** production, with no application to the production of textbooks. Illustrate on the original graph how we would represent this change in production possibilities. **Label this shift as F.**

*[Check students' graph. The new technology does not affect the production of textbooks, so the graph should illustrate this by only shifting the novel end **outward** and leaving the textbook side still connected.]*

8. Suppose that a hurricane resulted in a 50% reduction in paper output (which is a key resource in the production of novels and textbooks). Illustrate on the original graph how we would represent this change in production possibilities. **Label this shift as G.**

*[Check student's graph. The hurricane affects the production of both textbooks and novels, this should be illustrated by shifting the entire curve **inward**.]*