Self Test

Climbing the Energy/Development Ladder to a Sustainable Energy Future

Click on True or False to test your knowledge of the chapter.

1. **True** **False** The Gini coefficient for the following distribution of wealth is 36.7 %. (Contributed by Ali Albinali)

Population Category	Share of Income, %
Lowest 20%	7
Next 20%	12
Next 20%	18
Next 30%	24
Top 10%	39

2. **True** **False.** The biomass production function for a privately owned plot of land is $F(L) = 6L - \frac{1}{12}L^3 + \frac{3}{2}L^2$ If the market price P for biomass is 2 and the price of labor P_L is 17, the optimal amount of labor is 0.9. (Contributed by Joseph Chavez)

3. **True** **False**. If the above plot of land was a commons, we would expect is to be over exploited compared to the above optimal solution. (Contributed by Joseph Chavez)

4. **True** **False.** If the above plot of land was a commons, we would expect labor to be at 16.1, (Contributed by Joseph Chavez)

5. **True** **False** Assume that trees in a forest are growing according to $V(t) = 10t + t^2 - 0.005t^3$. The maximum sustainable yield (MSY) is at t = 138.2. NPV maximization under timber unit price of 90 and harvest cost of 30 at t = 6.93. (Contributed by Ali Albinali)

6. **True** **False** A timber extractor who is able to replant the forest immediately after harvesting the old timber optimizes extraction or harvesting under "infinite rotation" . In this case, extraction takes place sooner than in the single extraction case. (Contributed by Ali Albinali)

7. **True** **False** Gabon gets about 62% of its energy from BioC&W, but is exceptional from other high BioC&W consumers in a few ways, including:

a) It has a low GDP per capita relative to other BioC&W consumers
b) It has a low urbanization rate
c) It has the lowest amount of forest cover

(Contributed by Joseph Chavez)

8. **True** **False** One way governments have worked to increase adoption of renewables is through tax credits. A tax credit functions similarly to a subsidy to consumers. Suppose the demand function for ethanol panels is P=20-4Q and the supply function is Q=.25P-0.5, where Q is the amount of capacity in liters. If the government would like to double capacity from current levels

(the market is in competitive equilibrium), the government should introduce a subsidy of 21¢ a liter to the buyers. (Contributed by Joseph Chavez)