

**MID-TERM EXAMINATION**

**NAME:** \_\_\_\_\_ **Row:** \_\_\_\_\_ **Side (N/S)** \_\_\_\_\_

**Part I. Multiple-Choice Questions** (50 points, 5 points each)

- (a) The recent news that is different from what's discussed in Chapter one of our textbook is:  
 higher food prices     lower food prices     more farmers     fewer farmers
- (b) In poorer countries, income at market exchange rates (instead of PPP prices) is usually:  
 higher than PPP     lower than PPP     same as PPP     can't tell
- (c) The demographic transition involves:  
 falling death rates     falling birth rates     falling family sizes     all of these
- (d) During the demographic transition, the population growth rate tends to:  
 keep rising     keep falling     rise and then fall     fall and then rise
- (e) The structural transformation involves:  
 fewer ag. workers     lower ag. income     less ag. output     none of these
- (f) During the structural transformation, the number of farmers in a country tends to:  
 keep rising     keep falling     rise and then fall     fall and then rise
- (g) When Q is quantity demanded and P is price, the formula for price elasticity of demand is:  
  $\% \Delta Q / \% \Delta P$       $\% \Delta P / \% \Delta Q$       $\Delta Q / \Delta P$       $\Delta P / \Delta Q$
- (h) When Q is quantity demanded and Y is income, the formula for income elasticity of demand is:  
  $\% \Delta Q / \% \Delta Y$       $\% \Delta Y / \% \Delta Q$       $\Delta Q / \Delta Y$       $\Delta Y / \Delta Q$
- (i) When  $P_i$ ,  $P_o$  are prices and  $Q_i$ ,  $Q_o$  are quantities of inputs & outputs, the slope of a profit line is:  
  $P_i / P_o$       $P_o / P_i$       $\Delta Q_o / \Delta Q_i$       $\Delta Q_i / \Delta Q_o$
- (j) Using similar symbols, the slope of the Input Response Curve (IRC) is:  
  $\% \Delta Q_i / \% \Delta Q_o$       $\% \Delta Q_o / \% \Delta Q_i$       $\Delta Q_o / \Delta Q_i$       $\Delta Q_i / \Delta Q_o$

**Part II. Economic Analysis**

The Dannon Company, one of the world’s largest producers of yogurt, has hired you to help plan their expansion in a small country in Latin America. Fortunately, you took AGECE 340 and so can apply the basic toolkit of economics to explain and predict changes in this market.

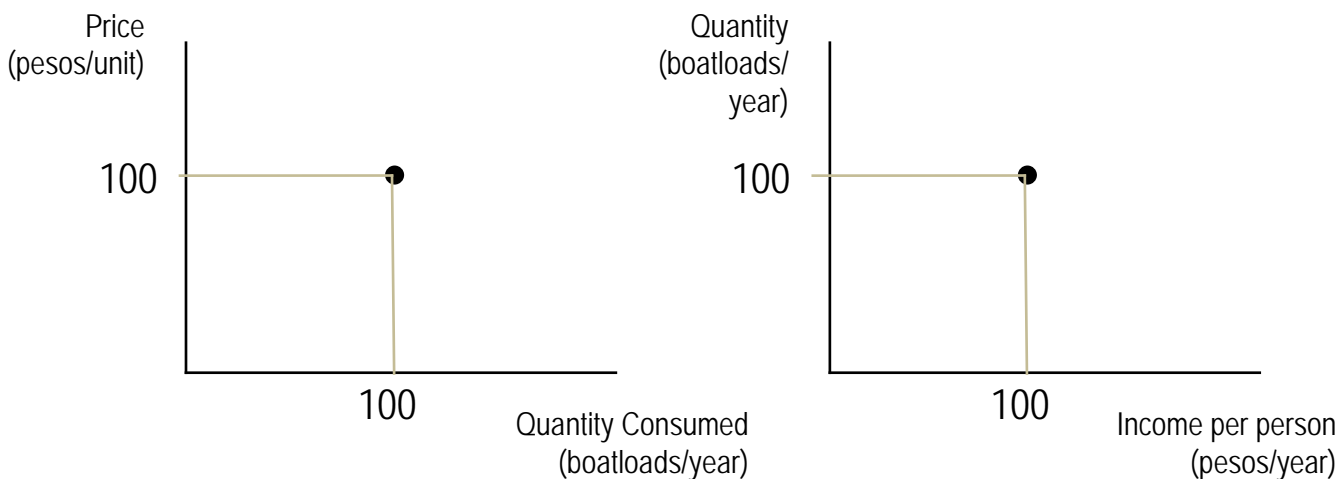
**(1) Food demand (75 points)**

Your first challenge is to explain and predict changes in consumer demand for yogurt. You start by collecting some data on the current situation in this country, which by an astonishing coincidence happens to be 100 boatloads per year, at a price of 100 pesos per unit, when people have an average per-capita income of 100 pesos per year. This observation is already drawn on the charts below. Using round numbers makes the arithmetic very easy. The analysis is also helped by the fact that yogurt consumption accounts for a very small fraction of income in this country, so changes in price have a negligible effect on income and vice-versa.

(a) From previous experience, you reckon that **the price elasticity of demand for yogurt is -0.3**. Using this guesstimate, place **a small triangle** on each of the two diagrams, showing how you predict consumers would respond to **a 10% higher price**. Note that you need to draw two triangles, one on each diagram, and label the corresponding number along all four axes on the two diagrams.

(b) From previous experience, you reckon that **the income elasticity of demand for yogurt is +1.0**. Using this guesstimate, place **a small square** on each of the two diagrams, showing how you predict consumers would respond to **a 10% higher income**. Note that you need to draw two triangles, one on each diagram, and label the corresponding number along all four axes on the two diagrams.

(c) Now, on the two diagrams, **sketch solid lines** through the observed points showing how changes in price (on the left-hand diagram) and income (on the right-hand diagram) are likely to influence the consumer demand for yogurt in this country.



**(2) Food supply (75 points)**

Your second challenge is to explain and predict changes in the production of milk (for yogurt) as opposed to other products. Again, you start with an observation of the current situation, which happens to be 100 tankloads per year, which is produced using 100 trainloads per year of feed. Farmers also produce 100 boxcars per year of meat using other inputs.

(i) Are these the only possible quantities that farmers could produce? To answer, **draw a dark, solid line or curve showing the other combinations of milk, feed and meat** that you think farmers in this country are physically capable of producing, given current weather conditions and technology. Make sure the location and shape of this line or curve corresponds to what you know about how farmers are likely to use any additional feed or other inputs in the production of milk and meat.

(ii) Why do farmers now produce the quantities they do? To answer, **draw a lighter, solid line showing the relative prices of milk, feed and meat**, in a way that helps explain why farmers produced what they did. Make sure the location and shape of this line or curve corresponds to what you know about how economists explain farmers' choices of input use and production levels.

(iii) What if milk becomes more valuable? To answer, **draw dashed lines that illustrate a higher price of milk and draw small triangles** to show how farmers are likely to respond to that change. Make sure the location of these triangles correspond to what you know about how economists explain farmers' choices of input use and production levels.

