

ECO 610
Problem Set #2
Fall 2020

1. "Cocoa prices for September delivery on the ICE Futures U.S. exchange settled at \$3,260 a metric ton on Friday, up 12% in 2015." (*WSJ* 6/20/15). World output of cocoa declined from 4.36 million metric tons to 4.23 million metric tons between 2014 and 2015.

- (a) (6 pts.) Calculate own-price elasticity of demand for cocoa.
- (b) (4 pts.) Knowing what you do about factors affecting own-price elasticity of demand, can you think of any reasons why you got a number like you did?

2. We own and operate a Johnny Jim's sandwich shop. After some experimentation with our current configuration of the restaurant, we find that labor and output vary in the following way:

Labor (person- hours)	0	1	2	3	4	5	6	7	8
Output (meals per hour)	0	12	32	64	90	105	115	120	122

- (a) (5 pts.) Use the concept of marginal product to explain at what point diminishing returns set in.
- (b) (5 pts.) Total compensation costs (wages plus benefits) per worker are \$10 per hour. The only other variable costs besides labor are the sandwich ingredients, which cost a constant \$.50 per sandwich. Plot eight points on our firm's average variable cost curve.