

Study Question -- Utility

Jeff has \$100 to spend on Beer or Pizza. Beer costs \$2 each; pizza costs \$4 each. Jeff's utility function is $U = B \cdot P^8$, where B is units of Beer and P is units of pizza.

- a) Calculate how much Beer and Pizza Jeff should buy to maximize his utility.
- b) Determine at least three points (quantity, price) on Jeff's demand curve for Pizza.
- c) If Jeff's income doubles (and the prices of Beer and Pizza remain unchanged), then what happens to his purchases of Beer and Pizza?

a) Beer demand = $.2(100)/2 = 10$ units
pizza demand = $.8(100)/4 = 20$ units

b) I will do coordinates of Jeff's Pizza demand curve at pizza prices \$4, \$5, and \$6

We already did \$4 (20, 4)

At \$5: pizza demand = $.8(100)/5 = 16$, so the coordinates are (16, \$5)

At \$6: pizza demand = $.8(100)/6 = 13.333$, so the coordinates are (13.333, \$6)

(If you graph these points, then you find that Jeff's pizza demand curve is not a straight line!)

c) His purchases of both double
Beer demand = $.2(200)/2 = 20$ units
pizza demand = $.8(200)/4 = 40$ units

(This means that Jeff's income elasticity of demand for both goods = 1!)