Economics 1A – Extra Problem for Problem Set #5, Wages and Leisure

(a) Sal’s wage is $12 per hour. Draw his daily budget constraint between “goods” (measured in $) and leisure (putting leisure on the horizontal axis).

(b) Write the equation of this budget constraint (using symbols \( l = \) leisure and \( G = \) “goods”). What is the slope of the budget constraint?

\[ \$288 = \$G + \$12l \]
This can also be expressed as \( \$G = \$288 - \$12l \)
Slope = -12, which is negative price of leisure (wage) over price of unit of “goods”.

(c) Suppose that Sal consumes “goods” and leisure only in fixed proportion, so that for every hour of leisure he takes he consumes $6 of goods (i.e. \( 6l = G \)). What type of goods are leisure and “goods”? What will his optimal consumption of leisure and goods be? What is the income elasticity of demand for leisure? What type of good is leisure?

Since both goods are consumed in a fixed proportion, they are compliments. The optimal consumption of leisure and “goods” is 16 hours of leisure and $96 of “goods”. This can be found by substituting \( 6l = G \) in to the budget constraint to get \( \$288 = \$6l + \$12l \), and then solving for “l”. The income elasticity of demand for leisure is 1, since both goods increase at the same rate as income. Since the elasticity is exactly 1, the good is normal; but neither a luxury nor a necessary good.

(d) Suppose his wage increases to $18 per hour. What is the equation of his new budget constraint? What are his new consumption choices per day?

\[ \$432 = \$G + \$18l \]
At this wage, he consumes 18 hours of leisure and $108 worth of “goods”.


(e) What is the price elasticity of leisure in this example (measured around the starting point where its price is $12 per hour- remember the price of leisure is the wage). What type of good is leisure?

The price elasticity of leisure is 0.25. But since this value is +ve (as opposed to all other price elasticities for goods where just the absolute value is +ve) it is a Giffen good.

(f) Why does the wage gain increase leisure consumption even though the price of leisure has gone up?

The wage gain allows Sal to purchase more units of “goods” per hour worked. Since Sal consumes “goods” and leisure in a fixed proportion, when his wage goes up, he works fewer hours, in order to have enough leisure to compliment his increased quantity of “goods”.

(g) If “goods” and leisure were closer to perfect substitutes, show on a diagram that the rise in the wage would produce less increase in leisure consumption, and more increase in “goods” consumption.