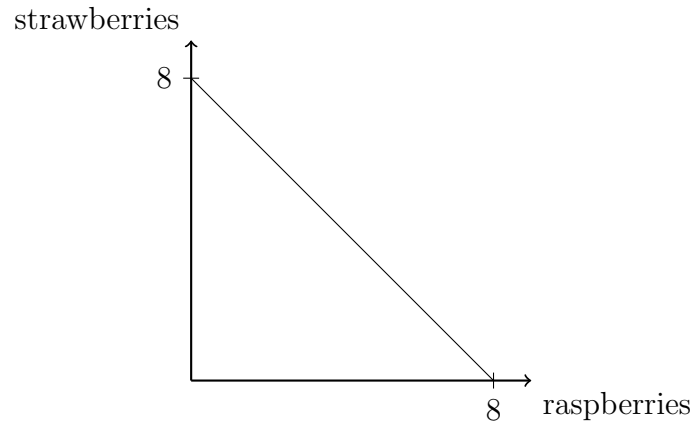


Problem 1

a)



b)

$$\begin{aligned} MU_X &= \frac{\delta U}{\delta x} = 3 \\ MU_Y &= \frac{\delta U}{\delta y} = 2 \\ MRS &= -\frac{MU_X}{MU_Y} \\ &= -\frac{3}{2} \end{aligned}$$

What this means is that, as MRS is invariant in respect to both x, y , then for varying amounts of strawberries and raspberries MRS is constant at 1.5 for typical consumers.

c)

As above, the marginal utilities for raspberries and strawberries are respectively $MU_Y = 2$ and $MU_X = 3$. Now given that the prices of those two fruits are equal, then we have that an utility maximizing consumer buys only strawberries and no raspberries. This can be seen as $MRS = 1.5 > \frac{P_X}{P_Y} = 1$.

Problem 4

a)

$$\max_{x,y} (z^2 \ln(x) + y), \text{ s.t. } p_x x + y = M$$

b)

c)

Assume that for the rest of the problem that the solution is interior.

Neither normal nor inferior.

x is not Giffen.

d)

e)

Note that goods whose consumption rises with price are called Veblen goods, or status symbol goods. Demand increases with price because the good becomes a more effective means of conveying status.

Note that here as U varies with $z = p_x$, we have that demand and the effective preferences of consumers change with the price of a good. However, in a Giffen good, we see that budget constraints change such that optimization changes.