1. The demand for *Campa Cola* is $q = 4 - p$ and the supply is given by $q = p - 2$. Compute the consumer and producer surplus.

2. Find the degree of homogeneity for the following functions: (i) $f(x, y) = 5x + 5y$, (ii) $f(x, y) = x^\alpha y^\beta$.

3. Find the domain for the following functions:

(i) $f(x, y) = x^2 + xy$, (ii) $f(x, y) = \sqrt{x - 2} + y$, (iii) $f(x, y) = \dfrac{1}{5 - x} + \dfrac{1}{y - 5}$.

4. Find all first and second order partial derivatives for the following functions:

(i) $f(x, y) = x^2 y^3$, (ii) $f(x, y) = x + \dfrac{x}{y - 1}$