Section 2

Econ 50 - Stanford University - Winter Quarter 2015/16

January 22, 2016

Exercise 1: Quasilinear Utility Function

Solve the following utility maximization problem:

$$\max_{x,y}\{\sqrt{x} + y\} \quad \text{s.t. } p_x x + p_y y = I$$

Exercise 2: Utility Maximization with a Kinked Budget Constraint

Suppose that there are two types of goods in the economy: food F and composite goods C, which is a weighted mixture of all other goods one consumes apart from food. The consumer has a Cobb-Douglas utility function $u(C, F) = C^a F^{1-a}$, where a is between 0 and 1. His total budget comprises of \$100 worth of food stamps and \$100 of cash. The price of composite goods is normalized to 1, and the price of food is p_f.

a) Graph out this consumer's budget constraint.

b) Solve for the consumer's demand for C and F using the equation that describes the part of the budget constraint that lies the below the kink.

c) For what values of a do we get a solution that lies on the kink?