

National University of Singapore

Microeconomics III, EC4101 (L1)

Tutorial 2

Application of Consumer theory: Labor supply, comparative statics

Lecturer: Parimal Bag

1. Suppose Emma has the following preferences

$$v(x, \ell) = (x - 5)^{1/2}(\ell - 10)^{1/2},$$

where five units of the general consumption good, x , and ten hours of leisure, ℓ , are the minimal consumptions (of x and ℓ) that Emma must have to maintain her sanity. Let T be the maximum number of hours that Emma is allowed to work by her employer ($T > 24$). Interpret T also to be the maximum leisure hours that Emma can enjoy. Let w be the hourly wage rate, and p be the price of good x . Assume $w > p$.

- (a) Write Emma's budget equation.
- (b) Derive Emma's demand function for leisure as a function of w and p .
- (c) Suppose the government offers Emma a wage-supplement $s > 0$ for every hour of work. What happens to Emma's optimal work choice?
- (d) Suppose the government imposes a tax $t > 0$ for every hour of work. What happens to Emma's work choice?
- (e) Are x and ℓ substitutes or complements?