Chapter 6. Quantitative Answers

1. Sally has no other source of income except for her job at a coffee house that pays $6.50/hour. Since she is such a good worker, her boss lets her choose how many hours she wants to work each week as long as it is between one and 20 hours.

   (a) Graph her weekly budget constraint.

   **Answers:**

   [Graph of budget constraint]

   (b) How many hours must Sally work to cover her weekly rent and food expenses that total $91/week?

   **Answers:**

   Expenses = $91/week / $6.50/hour = 14 hours

   (c) If Sally gets a raise to $7.50/hour but chooses to still work only enough to cover her rent and food expenses, now how many hours must she work?

   **Answers:**

   Expenses = $91/week / $7.00/hour = 13 hours

2. (a) Jim: $20/hr * 40hrs/wk = $800/wk. 50% of $800/wk is $400/wk. Since this exceeds the maximum permissible benefit, Jim will collect the maximum, or $300/wk. Ted: $10/hr * 40hrs/wk = $400/wk. 50% of $400/wk is $200/wk. Thus, Ted will collect $200/wk.

   (b) Jim: $300/$800 = 37.5%. Ted: $200/$400 = 50%.

   (c) Jim: $300/$20 = 15 hrs/wk. Ted: $200/$10 = 20 hrs/wk.

3. (a) subsidy=6000−2500=$3,500. y=subsidy+income=$3,500+$2,500=$6,000.

   (b) subsidy = 6000−0.3*2500 = $5, 250. y = subsidy+income = $5, 250+$2, 500 = $7, 750.

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4. The following parameters are for the Earned Income Tax Credit in 2012 for non-married individuals (See Figure 6.17):

(a) Above what income level is a woman with two or more children no longer affected by the EITC program?

**Answers:**

There is no tax credit for income levels above $41,952.

(b) Izabella is a single woman with two children who currently is working part-time, earning $13,000 per year working, and taking advantage of her tax credit under the plan. How much tax credit is she presently receiving?

**Answers:**

Izabella is in zone BD on Figure 6.17. With an income of $13,000 per year, she will receive the maximum tax credit of $5,236.

(c) Ann is a single woman with three children who currently is working part-time, earning $30,000 per year working, and taking advantage of her tax credit under the plan. How much will her net income be after the tax credit?

**Answers:**

Ann is in zone DE on Figure 6.17. With an income of $30,000 per year, she will receive net income of $23,700 ($=30,000*0.79).

5. (a) To maximize his utility, John works 40 hours of week (leaving 128 hours for leisure) and earns $320/wk.
(c) John’s income is calculated as $100 + 8 \times L$. To maintain an income of $320/\text{wk}$, John must work 27.5 hours per week ($320 = 100 + 8 \times L \implies L = 220/8 = 27.5$).