# Handout 3

## 1 Logistics

- Midterm exam in 2 weeks (11/9 - 11/10).
- CH5 Homework due next Monday (11/2).
- Handout: http://www.haochehsu.com (Handout can be found at the *Teaching* section)
- Feel free to use the anonymous *Feedback Survey* for any comments of suggestions.

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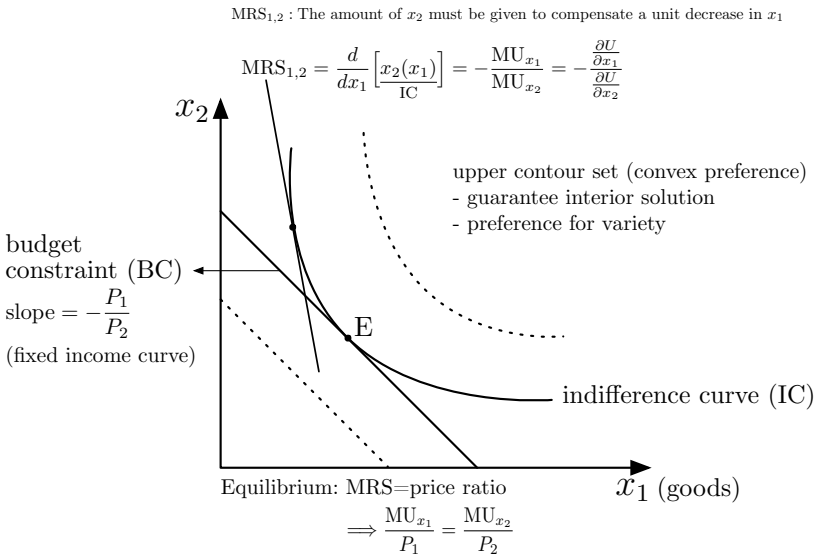


## 2 Exercises

- Review Ch3 and Ch4 homework.

1. Christine has preferences represented by the utility function: $U(x, y) = \min\{6x + y, x + 2y\}$. What is the slope of her indifference curve at point $(8, 9)$ with $x$ on the horizontal axis?

2. Zoe's utility is represented by $U(x, y) = \min\{4x, y\}$ when consuming good $x$ and $y$. Given a budget constraint $2x + y = 12$, what is the her optimal consumption quantity of the two goods?

3. Colin's utility function is $U(x_1, x_2) = 4\sqrt{x_1} + x_2$ where $x_1$ and $x_2$ are quantity of nuts and berries. His initially consumes 64 units of nuts and 10 units of berries. If he wants to eat an additional 17 units of nuts, what is the largest number of berries that he is willing to give up?

4. True of False? At a boundary optimum, a consumer's indifference curve must be tangent to her budget line.

5. Mathew's utility function for good $x_1$ and $x_2$ is $U(x_1, x_2) = x_1^4 x_2$. Given the price of $x_1$ and $x_2$ are \$20 and \$10 respectively, what is his optimal consumption bundle if his income is 100?

6. Given the price for goods $X$ and $Y$ are $P_X = 2$ and $P_Y = 1$, what is the optimal consumption bundle if the utility function is $U(X, Y) = 3X + 2Y$ with income 100?