

## Practice Set 1

### Basics & Prerequisites

This set contains problems for your own practice. It is highly recommended to work on the problems on your own. Do not just read the provided solutions. Instead, try to solve the problems and use the solutions only when you cannot continue on your own. Reading problems that someone else has solved has the same value for your preparation like watching someone else running a marathon on TV and then expecting to be able to run it, too. If you have questions on this set, please ask your section's teaching assistant.

1. The following table contains information for the qualifications, sex and annual wage of 4 particular employees.

	<i>Degree</i>	<i>Languages</i>	<i>Sex</i>	<i>Annual Wage</i>
<i>Kate</i>	Bachelor	English, Mandarin	F	\$90K
<i>Emma</i>	Master's	English	F	\$110K
<i>Olivia</i>	Master's	English, Mandarin	F	\$140K
<i>David</i>	Ph.D.	English	M	\$170K

- (a) Can you tell what is the effect of obtaining a Master's on *annual wage*?
- (b) Can you tell what is the effect of *speaking Mandarin* on *annual wage*?
- (c) Can you tell what is the effect of each individual's *sex* on *annual wage*?
2. Nancy is a personal trainer. At the market price of \$40 per hour she can find plenty of clients. Nancy also owns video equipment and once a month she films a YouTube video for her channel "Pilates with Nancy". It takes Nancy around 6 hours to produce a video on her own from start to finish. On average, each of her videos brings her \$500 of ad revenue. If Nancy was not producing videos, she could rent out her equipment for \$150 per month.
- (a) How much is the accounting cost of a video?
- (b) How much is the economic cost of a video?
- (c) How much is Nancy's accounting profit from a video and what information does this value provide to you?
- (d) How much is Nancy's economic profit from a video and what information does this value provide to you?
- (e) How much is Nancy's economic profit from a video if there is a significant increase in the demand for personal training in the area and its market price increases to \$65 per hour?

3. The following table shows the total utility ( $U$ ) I receive from eating cheesecake.

Slices	0	1	2	3	4
$U$	5	15	24	24	12

- (a) Why could I receive 5 units of utility if I have no cheesecake?
- (b) Calculate the average utility ( $AU$ ) for each slice by dividing total utility by the number of slices. Calculate the marginal utility ( $MU$ ) by calculating the contribution of each slice to total utility.
4. Consider the equations for the lines  $y = 10 + 3x$  and  $y = 100 - 2x$ . Find  $x$  and  $y$  at the intersection of the two lines.