Steve

ECON 101 (Trost)

TA Session Worksheet, Module 1 (Intro)

Name:_____ TA:_____

1. What's the opportunity cost (for you) of attending today's TA session?

The next best thing you could have done instead of attending this TA session.

Examples: sleeping, eating, studying for another class,…

2. Describe a time you didn't ignore sunk costs (or make one up!).

Any time where you didn't ignore a cost that you already paid and could not get back. For example, yesterday I didn't do any schoolwork; at midnight, I realized this and stayed up really late working so that I didn't "waste my day". But the time that already passed was a sunk cost, because I couldn't get any of it back by staying up late.

3. Donuts cost $0.60. The first donut gives you $2 worth of benefit. Each following donut gives you half as much benefit as the previous one. How many donuts should you buy?

# Donuts	Marginal Benefit	Marginal Cost	Buy?
1	$2.00	$0.60	Yes (MB>MC)
2	$1.00	$0.60	Yes (MB>MC)
3	$0.50	$0.60	No (MB<MC)

4. In your group, come up with a good example of one of the economic "mistakes" we talked about. (unintended consequences, confusing association with causation, fallacy of composition, sample selection bias).

Unintended consequences: ban of e-cigarette ads. If e-cig ads attract smokers away from cigarettes, banning e-cig ads could increase cigarette smoking.

Correlation vs. causation: people who sleep less than 7 hours a night die younger than the average. Therefore, sleeping less than 7 hours shortens lifespan.

Composition: John wants to fish in a lake. If too many people fish there, there will be overfishing and no one will get enough fish.

Selection: newspaper surveys their subscribers to predict an election, if most subscribers are democrats, the survey will overestimate democrats' chances of winning.

5. MATH!!! (TA – do only what you have time for. Can save the rest for next week!)
   a. Suppose you know that the two points (X, Y) = (12, 6) and (15, 2) sit on the same line. From this information write an equation for this line in slope-intercept form (drawing might help!).

Slope = (y2 – y1) / (x2 – x1) = (6-2) / (12-15) = -4/3

Y = -4/3 x + 22

   b. Suppose that you know that the slope of the line is 2 and that this line also contains the point (15, 35). What is the y-intercept for this line? Show your work.

35 = 2(15) + C

C = 5

c. You are given the following two equations:
Y = 2X + 100
Y = 76 – 10X
Find the solution (X, Y) for where these two equations intersect. Show your work.

2x + 100 = 76-10x

X = -2

Y = 2(-2) + 100 = 96

CHALLENGE ROUND – ONLY DO IF YOU HAVE EXTRA TIME!!

d. Suppose that you know that the relationship between X and Y, where X is the variable measured on the horizontal axis, can be described by the following equation:
X = 30 – 2Y for all values of X ≥ 0
You are then told that for every Y value the X value has now increased by 5 units. Write the equation in slope-intercept form for this new line. Show your work. Hint: you might find it helpful to draw a "sketch" illustrating these two lines before you start doing your calculations.

X = 35-2y convert to slope-intercept (so solve for Y) : Y = 35/2 – X/2

e. Suppose that you know that the relationship between X and Y, where X is the variable measured on the horizontal axis, can be described by the following equation:
Y = 5 + 2X for all values of X ≥ 0
You are then told that for every X value the Y value has now decreased by 2 units. Write the equation in slope-intercept form for this new line. Show your work. Hint: you might find it helpful to draw a "sketch" illustrating these two lines before you start doing your calculations.

Y = 3 + 2X