

ECO 103, Winter 2021, Exam #1

Name:

Instructions: Answer all parts of all questions. You have 90 minutes to complete the exam. This exam is open note, but not open book. You are welcome to use any written materials that you might find helpful excluding textbooks. Calculators, but no other electronic devices, are allowed. Here are some things to keep in mind.

- i. Explain all of your answers. Unsupported answers will receive little or no credit.
- ii. On true/false questions, I only care about the quality of your explanation. Simply writing “true” or “false” will yield no credit.
- iii. Avoid extensive irrelevance, this will also cost you points. Your goal should be to provide clear and concise explanations.
- iv. It is more important to demonstrate that you understand the correct method. Minor math errors will result in only minor deductions.
- v. All parts of all questions are worth the same amount.
- vi. Many questions ask you about a deviation from something that we did in class. If you simply copy down what we did in class, I will award no credit.

1. Consider a household deciding whether to buy a new home. How does scarcity impact their decision?

2. True or False? If people are rational, then their decisions inevitably lead to socially desirable outcomes (*e.g.* efficiency).

3. What market failures contributed to the Aral Sea disaster?

4. Consider a good where one person's consumption does not prevent another from consuming it, and where it is impossible to stop anyone from consuming it. Why will a free market lead to too little of this good?

For questions #5-7, refer to the following table:

Table 1: Marginal Utility and Marginal Cost for New Houses

| Units | Marginal Utility | Marginal Cost |
|-------|------------------|---------------|
| 1 | 100 | 20 |
| 2 | 100 | 40 |
| 3 | 80 | 50 |
| 4 | 70 | 60 |
| 5 | 65 | 65 |
| 6 | 50 | 80 |
| 7 | 30 | 100 |

5. Why is the supply curve upward sloping in this example?

6. What are the equilibrium price and quantity in this example?

7. Suppose that the price of lumber, an input in the production of houses, increases. How would this affect the price and quantity of new housing?

8. Does higher inflation usually reduce or increase economic inequality?

9. Why is 2021 GDP growth expected to be higher in the U.S than Europe?

10. Our basic model of supply and demand assumes that firms are profit maximizers. Do you think that this is a valid assumption?

11. What subfield of macroeconomics seeks to understand why global GDP was lower in 2020 than in 2019?

The following graph shows Mexico's unemployment rate:

Figure 1: Unemployment Rate: Mexico



12. The North American Free Trade Agreement (NAFTA) went into effect on January 1, 1994. The treaty liberalized trade among the U.S., Canada, and Mexico. Is it valid to claim that NAFTA led to a rise in Mexican unemployment?

For Questions #13-16 use the following data:

Table 2: Economic Activity in the U.S.

| | Q(2020) | P(2020) | Q(2021) | P(2021) |
|---------------------------------|---------|---------|---------|---------|
| Business Equipment | 4 | 6 | 3 | 9 |
| Sushi | 4 | 2 | 3 | 3 |
| Sushi Rice (used to make sushi) | 4 | 1 | 3 | 1 |
| Stock Shares | 14 | 3 | 5 | 5 |
| Education | 9 | 8 | 2 | 10 |

13. Calculate nominal GDP for 2020. In doing so, explain why any items from the Table are *not* counted.

14. Calculate real GDP growth in 2021 using 2021 as the base year.

15. Construct a basket of goods and services which includes only the items included in consumption. Use this index to calculate inflation in 2021.

Bonus: Using the data from the table, explain how GDP's exclusion of non-market activity in 2021 could cause 2021 GDP growth to be artificially low. In answering this question, consider how the covid-19 pandemic has affected some of the items from the table.