

Place your name on the back of this sheet of paper and nowhere else. Staple your answers face up on the front of this sheet of paper. Failure to follow these directions will cost you 10 points. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

1) (15 points) To retire and keep your standard of living, you need to save 20 times your annual income. Suppose your retirement fund earns 6% interest and if you earn \$50,000/year. If you save for 40 years, you need to save \$502.14/month. If you save for 30 years, you need to save \$1070.05/month. There are two reasons why the extra 10 years greatly reduces how much you have to save. What are the two reasons? Explain your logic. (Note that this means you should start saving for retirement today.)

2) (20 points) According to the article by the Brookings Institute (link below), the growth of potential GDP (GDP at full employment) is hard to estimate. Why is it hard to estimate? What has caused it to slow down since COVID-19 hit? Explain your logic for both parts.

<https://www.brookings.edu/blog/up-front/2021/02/22/what-is-potential-gdp-and-why-is-it-so-controversial-right-now/>

3) (15 points) Increasing the life of a patent has both good and bad long-term impacts on the economy. Explain the good impact and how a longer lived patent is good for the economy.

4) (20 points) A country saving more is good for growth of the full-employment GDP. Explain why this is true. The national saving includes government saving or dissaving. President Clinton left office with a budget surplus. President Bush changed that to a budget deficit. Every president since then has increased the deficit. Given what you answered in the first part of this question, is that good or bad for the country? Explain your logic.

5) (10 points each) Answer each part in separate paragraphs. For each of the following, explain how it will affect the full-employment level of GDP in the future. Explain your logic.

A) The government subsidizes research and development.

B) Creative destruction is done well.

C) China basically does not enforce intellectual property rights. How will that affect China?