

Math 113 Stretch 6

Spring 2023, Section 4, Mr. Joshua Siktar

April 10, 2023

1 Percentages [6 points]

- a. On January 4, 2021 the share price of Apple stock (AAPL) was 129.41 dollars. On March 4, 2021, the share price was 120.13 dollars. What is the percent decrease of the stock price in this time period?
- b. In 2019, the government received 3.46 trillion dollars in income tax. In the case of raising taxes by 25 percent, what would you estimate the new total to be¹?
- A. 4.965 trillion dollars
 - B. 3.809 trillion dollars
 - C. 5.143 trillion dollars
 - D. 4.325 trillion dollars

¹This problem was written by a former MATH 113 student

2 Taxes [10 points]

| A.G.I. (adjusted gross income) | Taxes Owed |
|--------------------------------|--|
| \$0 to \$9,875 | 10% of income |
| \$9,876 to \$40,125 | \$987.50, plus 12% of the amount beyond \$9,875 |
| \$40,126 to \$85,525 | \$4,617.50, plus 22% of the amount beyond \$40,125 |
| \$85,526 to \$163,300 | \$14,605.50, plus 24% of the amount beyond \$85,525 |
| \$163,301 to \$207,350 | \$33,271.50, plus 32% of the amount beyond \$163,300 |
| \$207,351 to \$518,400 | \$47,367.50, plus 35% of the amount beyond \$207,350 |
| Over \$518,400 | \$162,456, plus 37% of the amount beyond \$518,400 |

- a. Briefly describe, in your own words, the two main “types” of problems that a tax table can help you answer.
Note: We looked at examples of each in the Day 4 Story.
- b. Using the data in the table, find the amount of your income that will be taxed if your annual income is 80,000 dollars.
- c. Using the data in the table, find your adjusted gross income (A.G.I.) if the amount of taxes you owe is 42,000 dollars.

3 Deductibles [8 points]

a. Suppose your medical expenses for the year are 5300 dollars, and your deductible is 2300 dollars. If your insurance policy provider pays for 80 percent of the expenses beyond the deductible, how much money will need to come out of your pocket? **Note:** there are actually two ways to do this problem.

b. If you have a 1700 dollar deductible on auto insurance, then have a car accident, how much money would you need to pay up front before an insurance claim would help cover some of the expenses?

c. **Bonus [up to 3 points]:** Your bill for treatment of your house from a termite infestation totals to be 5100 dollars. After you pay the deductible, your insurance provider pays 80 percent of remaining costs. The total amount, including the deductible, that you pay is 1500 dollars. What is the size of the deductible?