

## Lecture 12 questions

(These exercises are relevant for chapter 5 in Dierbach and chapter 4 in Sargent and Stachursky.)

**A1.** A popular model for stock valuation is the dividend-growth model. Make a function called *stock\_price*, which takes in three parameters, *dividends*, *interest\_rate*, and *growth\_rate*. The function should return the estimated stock price, which is equal to

$$\text{stock price} = \frac{\text{dividends}}{\text{interest rate} - \text{growth rate}}$$

Try it out with different values for the input arguments. What happens if the interest rate is equal to the growth rate?

**A2.** Call the function from A1 both with positional arguments and with keyword arguments.

**A3.** In the function from A1, the parameters *interest\_rate* and *growth\_rate* should have default values of 0.05 and 0.03, respectively. In this case you can call the function, only supplying the dividend. The shipping company Flex LNG has paid USD 1.85 during the last year. What should the stock price be, given default values on interest rate and growth?

**A4.** Write a Python program which contains two function definitions, the function from A1 and a function called "main". The main function should contain some text to notify the user what the program does. It should also ask for input of *dividends*, *interest\_rate*, and *growth\_rate*. Additionally, it should present the estimated stock price for the user. The Python program should contain a function call for the main function and the main function will then call the *stock\_price* function to get the price.

**A5.** Write a Python function named *printAsterisks* that is passed a positive integer value *n* and prints out a line of *n* asterisks. If *n* is greater than 75, then only 75 asterisks should be displayed.

**P4.** Write a Python function named *addVegetable* that takes a (possible empty) set of vegetable names and adds user-supplied vegetables

names if the given vegetable is not yet in the set. Write a program that prompts the user for vegetable names and displays the final set.

**P5.** Write a Python function named numVowels that is passed a string containing letters, each of which may be in either uppercase or lowercase. The function stores the word, number of vowels, and number of consonants in a dictionary. Write a program that prompts the user for words and displays the final dictionary.