

# Introduction to Financial Mathematics

## Math 30610 Homework 7

Andrei Jorza

due on Gradescope

Please choose 8 of the following exercises. You will only be graded on 8. Unless otherwise specified, all exercises are from the textbook. You are welcome to use any calculator, spreadsheet or programming language, as long as you explain clearly and completely your solution.

1. 2.3.2
2. 2.3.3
3. 2.3.10
4. 2.3.11
5. 2.3.15
6. 2.3.17
7. 2.3.20
8. 2.3.25
9. 2.3.38
10. On the back of this page is a list of dividends paid by Microsoft, and the price at the time of the last dividend. Assume that future dividends grow, from year to year, by the average growth rate since 2010, and are paid out in 4 equal quarterly dividends each fiscal year. What is the implied effective annual interest rate computed from the Dividend Discount Model on 8/17/2022?

Microsoft Dividends, Price on 8/17/2022 was \$291.31.

Date	Dividend
08/17/2022	\$0.62
05/18/2022	\$0.62
02/16/2022	\$0.62
11/17/2021	\$0.62
08/18/2021	\$0.56
05/19/2021	\$0.56
02/17/2021	\$0.56
11/18/2020	\$0.56
08/19/2020	\$0.51
05/20/2020	\$0.51
02/19/2020	\$0.51
11/20/2019	\$0.51
08/14/2019	\$0.46
05/15/2019	\$0.46
02/20/2019	\$0.46
11/14/2018	\$0.46
08/15/2018	\$0.42
05/16/2018	\$0.42
02/14/2018	\$0.42
11/15/2017	\$0.42
08/15/2017	\$0.39
05/16/2017	\$0.39
02/14/2017	\$0.39
11/15/2016	\$0.39
08/16/2016	\$0.36
05/17/2016	\$0.36
02/16/2016	\$0.36
11/17/2015	\$0.36
08/18/2015	\$0.31
05/19/2015	\$0.31
02/17/2015	\$0.31
11/18/2014	\$0.31
08/19/2014	\$0.28
05/13/2014	\$0.28
02/18/2014	\$0.28
11/19/2013	\$0.28
08/13/2013	\$0.23
05/14/2013	\$0.23
02/19/2013	\$0.23
11/13/2012	\$0.23
08/14/2012	\$0.20
05/15/2012	\$0.20
02/14/2012	\$0.20
11/15/2011	\$0.20
08/16/2011	\$0.16
05/17/2011	\$0.16
02/15/2011	\$0.16
11/16/2010	\$0.16