

**Deadline: May 18, 2021**

### **Question 1 - DCF Valuation Fundamentals**

**True or False:** Discounted cash flow valuation is based upon the notion that the value of an asset is the present value of the expected cash flows on that asset, discounted at a rate that reflects the riskiness of those cash flows. Specify whether the following statements about discounted cash flow valuation are true or false, assuming that all variables are constant except for the variable discussed below:

- A. As the discount rate increases, the value of an asset increases.
- B. As the expected growth rate in cash flows increases, the value of an asset increases.
- C. As the life of an asset is lengthened, the value of that asset increases.
- D. As the uncertainty about the expected cash flows increases, the value of an asset increases.
- E. An asset with an infinite life (i.e., it is expected to last forever) will have an infinite value.

### **Question 2 - Matching Cash flows and Discount Rates**

The following are the projected cash flows to equity and to the firm over the next five years:

<i>Year</i>	<i>CF to Equity</i>	<i>Int (1-t)</i>	<i>CF to Firm</i>
1	\$250.00	\$90.00	\$340.00
2	\$262.50	\$94.50	\$357.00
3	\$275.63	\$99.23	\$374.85
4	\$289.41	\$104.19	\$393.59
5	\$303.88	\$109.40	\$413.27
Terminal Value	\$3,946.50		\$6,000.00

(The terminal value is the value of the equity or firm at the end of year 5.)

The firm has a cost of equity of 12% and a cost of capital of 9.94%. Answer the following questions:

A. What is the value of the equity in this firm?

B. What is the value of the firm?

### Question 3 - CAPM: Historical Risk Premiums

The following table summarizes risk premiums for stocks in the United States, relative to treasury bills and bonds, for different time periods:

Risk Premium for Equity

	Stocks - T.Bills		Stocks - T.Bonds	
	Arithmetic	Geometric	Arithmetic	Geometric
1926-1990	8.41%	6.41%	7.24%	5.50%
1962-1990	4.10%	2.95%	3.92%	3.25%
1981-1990	6.05%	5.38%	0.13%	0.19%

A. What is this premium trying to measure?

B. Why is the geometric mean lower than the arithmetic mean for both bonds and bills?

C. If you had to use a historical risk premium, would you use the most recent data (1981-1990), or would you use the longer periods? Explain your reasoning.

### Question 4 – Discount Rate

The beta for Walmart, Inc is 0.42. The current six-month treasury bill rate is 0.09%, while the thirty-year bond rate is 1.66%. If you estimate the cost of equity for Walmart, based upon

(a) using the treasury bill rate as your risk-free rate.

(b) using the treasury bond rate as your risk-free rate.

Which one of these estimates would you use as discount rate? Why?