

FINC 330
Fall 2010
Mid-term Exam

Please print out this exam for your convenience. You have until midnight (EDT) Sunday, July 11 to complete and submit the exam for grading. Please note that late submissions of this exam will not be accepted.

Answer each of the following questions fully and to the best of your ability. In order to receive partial credit, work must be shown. Please upload your completed exams to the Assignment Folder as a MS Word or MS Excel attachment.

1. Complete the balance sheet for General Aviation, Inc. based on the following financial data.

Balance Sheet
General Aviation, Inc.
December 31, 2005

Assets	
Cash	\$ 8,005
Marketable Securities	\$16,000
Accounts receivable	\$62,000
Inventories	\$73,560
Total current assets	\$159,565
Gross fixed assets	\$146,663
Less: Accumulated depreciation	\$50,000
Net fixed assets	\$96,663
Total assets	<u>\$256,228</u>
Liabilities and Stockholders' Equity	
Accounts payable	\$28,800
Notes payable	\$20,300
Accruals	\$18,800
Total current liabilities	\$67,900
Long-term debts	\$58,677
Total liabilities	<u>\$126,577</u>
Stockholders' equity	
Preferred stock	\$ 2,451
Common stock at par	\$30,000
Paid-in capital in excess of par	\$ 6,400
Retained earnings	\$90,800
Total stockholders' equity	<u>\$129,651</u>
Total liabilities and stockholders' equity	<u>\$256,228</u>

Key Financial Data for 2005

- Sales totaled \$720,000 Gross profits = 278,640 COGS = 441,360
- Gross profit margin was 38.7 percent
- Inventory turned 6 times
- There are 360 days in the year

- Average collection period was 31 days
- Current ratio was 2.35
- Total asset turnover was 2.81
- Debt ratio was 49.4 percent
- Total current assets equal \$159,565

2. **Herbert has opened a retirement fund account which pays 7 percent interest and requires \$5,000 annual deposits. Herbert will retire in 15 years and expects 10 years of retirement life. What is the maximum annual retirement benefit Herbert can get during his retirement years?**

$$I=7\%$$

$$N=15$$

$$PMT=5000$$

$$FVIFA=25.129$$

$$\text{Balance after accumulation period} = \$125,645$$

$$I=7\%$$

$$N=10$$

$$PVIFA = 7.024$$

$$\text{Annual benefits} = \$125,645/7.024$$

$$\text{Maximum distribution over 10 years} = \underline{\$17,887.96}$$

3. **Hewitt Packing Company has an issue of \$1,000 par value bonds with a 14 percent coupon interest rate outstanding. The issue pays interest semiannually and has 10 years remaining to its maturity date. Bonds of similar risk are currently selling to yield a 12 percent rate of return. What is the value of these Hewitt Packing Company bonds?**

$$I=6\% \quad N=20$$

$$\text{Interest amount} = \$70[(14\% \times 1000)/2] \times (PVIFA 6\%, 20) = 70 \times 11.470 = \$802.90$$

$$\text{Principal} = \$1,000 (PVIF 6\%, 20) = 1000 \times .312 = \$312.00$$

$$\text{Total Value} = \underline{\$1,114.90}$$

4. **To expand its business, the Kingston Outlet factory would like to issue a bond with par value of \$1,000, coupon rate of 10 percent, and maturity 10 years from now. What is the value of the bond if the required rate of return is 1) 8 percent, 2) 10 percent, and 3) 12 percent?**

1) $I=8, N=10$

$$\text{Interest} = 100 \times PVIFA 8,10 = 100 \times 6.71 = 671.00$$

$$\text{Principal} = 1000 \times PVIF 8, 10 = 1000 \times .463 = 463.00$$

$$\text{Total} = \underline{\$1134}$$

2) $I=10, N=10$

$$\text{Interest} = 100 \times PVIFA 10,10 = 100 \times 6.145 = 614.50$$

$$\text{Principal} = 1000 \times PVIF 10,10 = 1000 \times .386 = 386.00$$

$$\text{Total} = \underline{\$1000.50^*}$$

*should be equal to the face value since the coupon and required rate are the same.

- 3) $I=12, N=10$
 Interest = $100 \times PVIFA_{12, 10} = 100 \times 5.65 = 565.00$
 Principal = $1000 \times PVIF_{12, 10} = 1000 \times .322 = 322.00$
 Total = **887.00**

5. To finance a new line of product, the Tangshan Toys has issued \$1,000,000 bond with a par value of \$1,000, coupon rate of 8 percent, and maturity of 30 years. Compute the price of the bond if the opportunity cost is 11 percent.

$I=11, N=30$
 Coupon interest payment = \$80
 Interest = $80 \times (PVIFA_{11, 30}) = 80 \times 8.694 = \695.52
 Principal = $1,000 \times (PVIF_{11, 30}) = 1,000 \times .044 = \44.00
 Total Cost = **\$739.52**

6. China America Manufacturing has a beta of 1.50, the risk-free rate of interest is currently 12 percent, and the required return on the market portfolio is 18 percent. The company plans to pay a dividend of \$2.45 per share in the coming year and anticipates that its future dividends will increase at an annual rate consistent with that experienced over the 2001-2003 period.

Year	Dividend
2003	2.32
2002	2.21
2001	2.10

Estimate the value of China America Manufacturing's stock.

Constant Growth ($P = D/(Rs - g)$)

$G = 2.10/2.32 = .905$ *The closest PV factor for 2 years is 5% (.907)

$P = 2.45 / (.18 - .05) = 2.45/.13 = \underline{\$18.85 \text{ per share}}$

7. Julie's X-Ray Company paid \$2.00 per share in common stock dividends last year. The company's policy is to allow its dividend to grow at 5 percent for 4 years and then the rate of growth changes to 3 percent per year from year 5 and on. What is the value of the stock if the required rate of return is 8 percent:

Variable Growth Model

t	Do	FVIF(5,t)	Dt	PVIF(8,t)	PV of DIV
1	2	1.05	2.1	0.926	1.9446
2	2	1.102	2.204	0.857	1.888828
3	2	1.158	2.316	0.794	1.838904
4	2	1.216	2.432	0.735	1.78752
		FVIF (3,1)	D(5)	(Rs-g) [.08-.03]	\$7.46
5	2.432	1.03	2.50496	0.05	50.10
				PVIF (8,4)	0.735
				PV Price	36.82
				Stock Value	\$44.28

8. Compute the value of a share of common stock of Lexi's Cookie Company whose most recent dividend was \$2.50 and is expected to grow at 3 percent per year for the next 5 years, after which the dividend growth rate will increase to 6 percent per year indefinitely. Assume 10 percent required rate of return.

t	Do	FVIF(3,t)	Dt	PVIF(6,t)	PV of DIV
1	\$2.50	1.03	\$2.58	0.943	\$2.43
2	\$2.50	1.061	\$2.65	0.89	\$2.36
3	\$2.50	1.093	\$2.73	0.84	\$2.30
4	\$2.50	1.126	\$2.82	0.792	\$2.23
5	\$2.50	1.159	\$2.90	0.747	\$2.16
		FVIF(6,1)		(Rs-g)	\$11.48
6	\$2.90	1.06	\$3.07	0.04	\$76.85
				PVIF(10,5)	0.621
					\$47.72
				Stock Value	\$59.20