Problem set ii essay

Chapter 9 # 17: Present values Jack Hammer invests in a stock that will pay dividends of $2. 00 at the end of the first year; $2. 20 at the end of the second year; and $2.

40 at the end of the third year. Also, he believes that at the end of the third year he will be able to sell the stock for $33. What is the present value of all future benefits if a discount rate of 11 percent is applied? (Round all values to two places to the right of the decimal point.) Answer: The following formula calculates the present values: PV = FV/ (1+r) ^t, where FV is the cash flow, discount rate r = 11%, t = year. From there: 1st year = $2.

00 x 0. 901= PV= $1. 80 2nd year = $2. 20 x 0. 802 = PV= $1. 79 3rd year = $35.

40 x 0. 731 = PV=$25. 88 Total PV= $29. 47 Thus, the PV of total benefit is $29. 47 Chapter 9 # 22: Alternative present values Your rich godfather has offered you a choice of one of the three following alternatives: $10, 000 now; $2, 000 a year for eight years; or $24, 000 at the end of eight years. Assuming you could earn 11 percent annually, which alternative should you choose? If you could earn 12 percent annually, would you still choose the same alternative? Answer: I found two answers for the same problems.

One is bringing the present value to the future and the other is bringing the future value to the present. In each one of them, different solutions were proposed. A. Present Value to the future Option 1: $10, 000 now with 11% interest.

$10, 000 x 11% = $11, 100(10, 000 + 1, 100) 1, 100 x 8 yrs = $8, 800 +

$10, 000 = $18, 800 $10, 000 now with 12% interest. $10, 000 x 12% = $11,

200 (10, 000 + 1, 200) 1, 200 x 8 yrs = $ 9, 600 + 10, 000 = $19, 600

Option 2: $2, 000 a year for eight years. $2, 000 x 11% = $2, 220 $2, 220 x

8 Years = $17, 760 $2, 000 x 12% = $2, 240 $2, 240 x 8 Years = $17, 920

Option 3 $24, 000 at the end of eight years. Choice: Option 3. The rate of

return in Options 1 and 2 is less than what is offered in option 3 at the end of

eight years.

B. Future Value to the Present Option 1: $10, 000 now; PV=$10, 000 Option

2: $2, 000 at 11% in 8 years 2, 000 x 5. 146 = $10, 292 $2, 000 at 12% in 8

years 2, 000 x 4. 968 = $9, 936 Option 3: $24, 000 in 8 years, to present

value, at 11% 24, 000 x 0.

434 = $10, 416 $24, 000 in 8 years, to the present value, at 12% 24, 000 x

0. 404 = $9, 696 Choice: The first option would be $24, 000 in 8 years at

11% In both options, the choice would be the same answer: $24, 000 in 8

years. Chapter 9 # 23: Payments required You need $28, 974 at the end of

10 years, and your only investment outlet is an 8 percent long-term

certificate of deposit (compounded annually). With the certificate of deposit,

you make an initial investment at the beginning of the first year. 1.

What single payment could be made at the beginning of the first year to

achieve this objective? Answer: Present Value PV = FV x PVIF (i= 8%, n= 10)

PV = 28, 974 x 0. 463 PV = 13, 415 2. What amount could you pay at the

end of each year annually for 10 years to achieve this same objective?

Answer: Annuity A = PVA / PVIFA (i= 8%, n= 10)PVA = A / PVIFA PVA = 28,

974 x 14. 487 PVA = 2, 000 Chapter 10 # 2: Bond value Midland Oil has $1, 000 par value bonds outstanding at 8 percent interest.

The bonds will mature in 25 years. Compute the current price of the bonds if the present yield to maturity is: 1. 7 percent. Answer: PVa = A x PV(i= 7%, n= 25) PVa = 80 x 11. 654 = 932. 32 = Present Value of interest payment PVm = FV x PV (i= 7%, n= 25) PVm = 1000 x 0.

184 = 184 = Present Value of principal payment at maturity Price of the bond = PVa + PVm = 932. 32 + 184 = $1, 116. 32 2. 10 percent. Answer: PVa = 80 x 9.

077 = 726. 6 = Present Value of interest payment PVm = 1000 x 0. 092 = 92 = Present Value of principal payment at maturity Price of the bond = 726. 16 + 92 = $818. 16 3. 13 percent.

Answer: PVa = 80 x 7. 330 = 586. 40 = Present Value of interest payment PVm = 1000 x 0. 047 = 47 = Present Value of principal payment at maturity Price of the bond = 586.

40 + 47 = $633. 40 Chapter 10 # 7: Interest Rate Effect Go to Table 10-1, which is based on bonds paying 10 percent interest for 20 years. Assume interest rates in the market (yield to maturity) decline from 11 percent to 8 percent: 1. What is the bond price at 11 percent? Answer: Price of the bond at (i= 11%, n= 20) = $920.

30 2. What is the bond price at 8 percent? Answer: Price of the bond at (i= 8%, n= 20) = $1, 196. 80 3. What would be your percentage return on

investment if you bought when rates were 11 percent and sold when rates were 8 percent? Answer: (1, 196.

80 – 920. 30) / (920. 30 x 100) = 30. 04% Chapter 10 # 19: Preferred Stock Value North Pole Cruise Lines issued preferred stock many years ago. It carries a fixed dividend of $6 per share.

With the passage of time, yields have soared from the original 6 percent to 14 percent (yield is the same as required rate of return). . What was the original issue price? Answer: Original price = fixed dividend / Initial yield = $6 / 6% = $100. 00 2. What is the current value of this preferred stock? Answer: Current Value of Preferred Stock = $6 / 14% = $42. 86 3.

If the yield on the Standard & Poor's Preferred Stock Index declines, how will the price of the preferred stock be affected? Answer: If the yield on S preferred stock index declines, the expected yield on the other preferred stocks will decline also, resulting in the increase of the market value of the preferred stocks. Chapter 10 #21: Preferred stock rate of returnAnalogue Technology has preferred stock outstanding that pays a $9 annual dividend. It has a price of $76. What is the required rate of return (yield) on the preferred stock? Answer: Required rate of return = Annual dividend / Price = $9 / $76 = 11. 84% (All of the following problems pertain to the common stock section of the chapter.) Chapter 10 # 24: Common Stock Value Friedman Steel Company will pay a dividend of $1.

50 per share in the next 12 months (D1). The required rate of return (Ke) is 10 percent and the constant growth rate (g) is 5 percent. 1. Compute P0.

Answer: P0 = [D1 (1 + g) x 1] / [(1 + Ke) x 1] = [$1. 50 (1+0. 05)x1] / [$1. 575 / (1+0. 10) x 1] = $1.

43 = PV of expected future returns, using the Discounted Cash Flow formula, which leads to the Constant Growth formula, as follow: P0 = D1 / (Ke – g) = $1. 43 / (0. 10-0. 05) = $28.

60 (For parts b, c, and d in this problem all variables remain the same except the one specifically changed. Each question is independent of the others.) 1. Assume Ke, the required rate of return, goes up to 12 percent; what will be the new value of P0? Answer: P0 = D1 / (Ke – g) = $1. / (0. 12 – 0.

05) = $21. 43 2. Assume the growth rate (g) goes up to 7 percent; what will be the new value of P0? Answer: P0 = D1 / (Ke – g) = $1. 5 / (0. 10 – 0.

07) = $50 3. Assume D1 is $2, what will be the new value of P0? Answer: P0 = D1 / (Ke – g) = $2 / (0. 10 – 0. 05) = $40 Chapter 10 # 27: Common Stock Value Based on determining growth rate A firm pays a $4. 90 dividend at the end of year one (D1), has a stock price of $70, and a constant growth rate (g) of 6 percent. Compute the required rate of return.

Answer: Ke = (D1 / P0) + g = ($4. 90 / $70) + 6% = 13%