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1. A typical successful movie brings in $3 million every day starting with its date of release. It usually stays on the big screen for 35 days on average. How much will it accumulate if the rate of return is 15% per year compounded daily (assume there are 365 days per year). Choose the closest alternative.

A. $95,687,690
B. $105,048,920
C. $105,747,697
D. $106,036,890
E. $106,995,260

· Need to have effective daily rate (EDR)

$EDR = \frac{15\%}{365} = 0.041\,69589\%$

$FVA = PMT \times \left[\frac{(1+r)^t - 1}{r}\right] \Rightarrow FVA_{35} = 3{,}000{,}000 \times \left[\frac{(1.000416\,9589)^{35} - 1}{0.000\,416\,9589}\right]$

or by financial Calculator: $PMT = 3{,}000{,}000$; $I/Y = 0.041\,69589$; $PV = 0$, $N = 35$

$\Rightarrow FV_{35} \doteq 105{,}747{,}697$

2. You are planning to retire in 30 years. Once you retire, you would like to be able to make equal annual withdrawals from your savings account of $60,000 over the next 25 years. You will then die, exactly 55 years from now (how sad!). You are planning to secure your retirement funds by making equal annual deposits into your savings account at the end of each of the next 30 years. If your account earns a 12% annual return, how much should you deposit at the end of each of the following 30 years, so that you can meet your retirement needs? Both annuities are ordinary.

A. $613.47
B. $703.54
C. $1,090.17
D. $1,949.96
E. $3,529.40

PV_{30} of the Annuity (After Rethe)

$\Rightarrow PMT = 60{,}000$; $I/Y = 12$; $N = 25$; $FV_{55} = 0$

$\Rightarrow PV_{30} = CPT = -470{,}588.3467$

This PV_{30} should be same as FV_{30} of the annuity (before rethe)

$\Rightarrow FV_{30} = -470{,}588.3467$; $I/Y = 12$; $N = 30$; $PV = 0$; $PMT = CPT = 1{,}949.96$

3. Which of the following is the best example of a conflict of interest between management and shareholders?

A. Management borrows heavily to fund risky projects.
B. Management fights against a takeover bid despite the market consensus that it is the most reasonable bid.
C. Management moves production overseas to take advantage of low-cost labor.
D. Management voluntarily recalls defective products.
E. All of the above.

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4. Alexis Hamelin has deposited $7,000 in a guaranteed investment account with a promised rate of 7% compounded semi-annually. He plans to leave it there for 4 full years when he will make a down payment on a car after graduation. How much of a down payment will he be able to make?

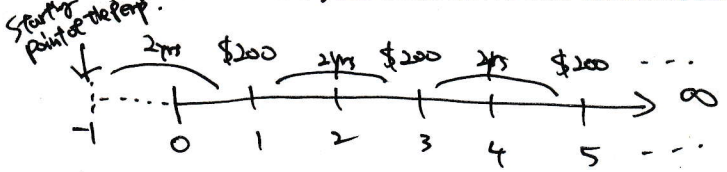
A. $5,315.91
B. $8,960.00
C. $9,175.57
(D.) $9,217.66
E. $9,239.51

$EAR = \left(1 + \frac{0.07}{2}\right)^{\frac{2}{1}} - 1 = 0.071225 = 7.1225\%$

$\$7{,}000 \times (1+0.071225)^4 \doteq \$9{,}217.66$

5. What is the present value of an investment that pays $200 every two years indefinitely, if the first payment starts a year from now? The effective monthly rate is 1 percent.

A. $556.17
B. $741.47
(C.) $835.51
D. $1,182.96
E. $1,573.96



PV_{-1} of the perpetuity : $\frac{200}{(1+0.01)^{24}-1} = \$741.47$

$PV_0 = PV_1 \times \underbrace{(1.01)^{12}}_{\text{effective annual rate}}$

6. Two perpetuities are identical in every way except that perpetuity A makes annual payments of $P starting four years from today, and perpetuity B makes annual payments of $P starting three year from today. It must be true that the present value of:

A. Perpetuity A is greater than that of perpetuity B by the present value of $P for three year.
(B.) Perpetuity B is greater than that of perpetuity A by the present value of $P for three year.
C. Perpetuity B is greater than that of perpetuity A by $P.
D. Perpetuity A is greater than that of perpetuity B by $P.
E. Perpetuity B is equal to that of perpetuity A.

PV of $A = \frac{P}{r} \times \frac{1}{(1+r)^3}$ ..... ①

PV of $B = \frac{P}{r} \times \frac{1}{(1+r)^2}$ ..... ②

$② - ① = \frac{P}{r}\left(\frac{1}{(1+r)^2} - \frac{1}{(1+r)^3}\right) = \boxed{\frac{P}{(1+r)^3}}$ → PV of P at t=3

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7. You need to borrow $10,000. You have two choices: Bank A at 9.5% compounded annually, or Bank B at 9.15% compounded semi-annually. Which would you choose and why?

A. Bank A because it has the higher quoted rate.
B. Bank A because the future value in one year is lower.
C. Bank A because it has a higher effective annual rate.
D. Bank B because the future value in one year is higher.
E. Bank B because it has a lower effective annual rate.

① ② ① $K \Rightarrow EAR = 9.5\%$.

② $K \Rightarrow EAR = \left(1 + \frac{0.0915}{2}\right)^{\frac{2}{1}} - 1$

$= 0.093593063$

$\doteq 9.35\%$.

8. An interest rate compounded twice a year yields an EAR of 5%. This rate is equivalent to what APR compounded daily? Assume 365 days in a year.

A. 4.88%
B. 9.76%
C. 10.00%
D. 10.25%
E. None of the above is correct.

$$\left(1 + \frac{APR}{365}\right)^{365} - 1 = 0.05$$

$$\Rightarrow APR = 0.0488$$

9. A firm purchases Class 10 equipment for $1,000,000 (CCA Rate 20%) for a 10-year project. What will be the CCA tax shield in year 4? The tax rate is 35%.

A. $40,320
B. $46,080
C. $69,120
D. $115,200
E. $200,000

Yr	Beg	CCA	End	TS
1	1,000,000	100,000	900,000	
2	900,000	180,000	720,000	
3	720,000	144,000	576,000	
4	576,000	115,200	460,800	$115,200 \times 0.35 = 40,320$

10. You have $1,000 that you would like to invest. You have two choices: Savings account A which earns 9% compounded annually, or savings account B which earns 8.75% compounded semi-annually. Which would you choose and why?

A. B because it has the higher quoted rate.
B. B because the future value in one year is lower.
C. B because it has a higher effective annual rate.
D. A because the future value in one year is lower.
E. A because it has a higher effective annual rate.

11. Patrick is a JMSB student who is financing his education with a student loan. Suppose Patrick owes $20,000 when he graduates. His loan has an interest rate of 6% with equal monthly payments over 10 years. Which of the following is correct?

I. The monthly payment is approximately $222.04
II. The interest paid over the life of the loan is approximately $6,645
III. The EAR on this loan is 6.17%

A. Only I is correct
B. Only III is correct
C. Only I and III are correct
D. Only II and III are correct
E. All of I, II, and III are correct

① $20{,}000 = PMT\left\{\dfrac{1-\dfrac{1}{(1+\frac{0.06}{12})^{120}}}{\frac{0.06}{12}}\right\}$

$PMT = \$222.04 \Rightarrow$ I is correct

② Interest = Total PMT − Principal
$= 222.0410 \times 120 - 20{,}000.$
$= \$6{,}644.9205 \Rightarrow$ II is correct.

③ $EAR = \left(1+\frac{0.06}{12}\right)^{12} - 1 = 0.0617 = 6.17\% \Rightarrow$ III is correct.

12. Your job pays you at the end of the year and today, December 31, you just received your salary of $50,000 and you plan to spend all of it. However, you want to start saving for retirement beginning next year. You have decided that one year from today you will begin depositing 5% of your annual salary in an account that will earn 11% per year. Your salary will increase 4% per year throughout your career. How much money will you have when you retire 40 years from today?

A. $34,399
B. $2,149,995
C. $2,235,994
D. $2,325,434
E. None of the above is correct.

$$FV_{40} = \left[\frac{50{,}000(1.04)(0.05)}{0.11-0.04}\right]\left(1-\left(\frac{1.04}{1.11}\right)^{40}\right)\times(1.11)^{40}$$

$$= \frac{2600}{0.07} \times 0.9261393 \times 65.00086731$$

$$= 2{,}235{,}994.306 \doteq 2{,}235{,}994$$

13. Investment A makes annual payments of $737.43 for each of the next 10 years, while investment B makes annual payments of $500 per year forever. At what interest rate would you be indifferent between the two investments?

A. 13%
B. 12%
C. 11%
D. 10%
E. 9%

$$737.43\left[\frac{1-\frac{1}{(1+r)^{10}}}{r}\right] = \frac{500}{r}$$

$$\Rightarrow 500 = 737.43\left\{1-\frac{1}{(1+r)^{10}}\right\}$$

$$\Rightarrow 237.43 = \frac{737.43}{(1+r)^{10}} \Rightarrow r = 0.12 = 12\%$$

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14. You purchase a bond with an invoice price of $968. The bond has a coupon rate of 7.4%, and there is two months to the next semiannual coupon date. What is the clean price of the bond?

A. $906.33
B. $937.17
C. $943.33
D. $955.67
E. $961.83

Semi Annual (6 months) Coupon = $37.

Since 4 months are passed from the last payment, the accrued interest is $37 \times \frac{4}{6} = 24.6666\cdots \doteq \$24.67$

Dirty (Invoice) Price = Clean (Cash) Price + Accrued Interest

$\$968 = \text{Clean Price} + \$24.67 \Rightarrow \text{Clean price} = \$943.33$

15. Gregoire Leclercq wishes to save money to provide for his retirement. Beginning one month from now, he will begin depositing a fixed amount into a retirement savings account that will earn 12% compounded monthly. He will make 360 such deposits. Then, one year after making his final deposit, he will withdraw $100,000 annually for 20 years. The fund will continue to earn 12% compounded monthly. How much should the monthly deposits be for his retirement plan?

A. $199.58
B. $204.89
C. $214.21
D. $234.89
E. $249.38

Gregoire's Savings for 360 months (30 yrs) must be Same with the annuity (20 yrs) from the 30th year.

$EMR = \frac{12\%}{12} = 1\%$, $EAR = \left(1 + \frac{12\%}{12}\right)^{12} - 1 = 12.682503\%$

$$FVA_{30(or\,360)} = \frac{PMT}{0.01}\left\{(1+0.01)^{360} - 1\right\} \quad (=) \quad PV_{30} = \frac{100{,}000}{0.12682503}\left\{1 - \frac{1}{(1+0.12682503)^{20}}\right\}$$

$$\frac{PMT}{0.01}\left\{1.01^{360} - 1\right\} = \$716{,}100.0993 \Rightarrow PMT = 204.89$$

16. Ali's company is planning to borrow $500,000 on a 25-year, 7 percent, annual payments, fully amortized term loan. What fraction of the payment made at the end of the eleventh year will represent repayment of principal?

A. 76.29%
B. 63.76%
C. 36.25%
D. 23.71%
E. None of the above

First, we calculate PMT. $\Rightarrow 500{,}000 = \frac{PMT}{0.07}\left[1 - \frac{1}{1.07^{25}}\right]$

$PMT = \$42{,}905.26$

Since Beginning Balance is PV of left over PMTs,

Beginning balance at $t=11$ (= Ending balance of $t=10$)

$$= \frac{42{,}905.26}{0.07} \times \left[1 - \frac{1}{(1.07)^{15}}\right] = \$390{,}777.45$$

$\Rightarrow$

Year	Beg Balance	PMT	Interest	Principal Repayment
11	390,777.45	42,905.26	390,777.45 × 0.07 = 27,354.42	42,905.26 − 27,354.42 = 15,550.84

Answer: $\frac{15{,}550.84}{42{,}905.26} = 36.25\%$

BLUE

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17. Choose the best alternative. Which one of the following statements regarding amortized loans is false?

A. Amortized loans all have a balloon payment at the end of the loan term.
B. Amortized loan payments consist of interest only.
C. An amortized loan requires only one lump sum payment at the end of the loan term.
D. B and C are false.
E. A, B, and C are false.

18. Desautels Enterprises borrowed $149,500 for two years from the bank. At the end of the two years, they repaid the loan with one payment of $176,590. What was the quoted interest rate on the loan? Assume the interest rate is quoted as an APR compounded semiannually.

A. 4.25%
B. 8.36%
C. 8.50%
D. 8.68%
E. None of the above

$$\text{Effective 2yr Rate} = \frac{176{,}590 - 149{,}500}{149{,}500} = 0.181204013$$

k = Effective 2yr Rate $\Rightarrow$ t = 2
Semi annual Compounding $\Rightarrow$ m = 2

$$0.181204013 = \left(1 + \frac{QR}{2}\right)^{\frac{2}{2}} = 0.085 \Rightarrow 8.5\%$$

19. You plan to buy a new UHDTV. The dealer offers to sell the set to you on credit. You will have 3 months in which to pay, but the dealer says you will be charged a 13 percent interest rate; that is, the nominal rate is 13 percent, semi-annual compounding. As an alternative to buying on credit, you can borrow the funds from your bank. At what nominal bank interest rate (APR compounded monthly) should you be indifferent between the two types of credit? Use at least 6 decimal places in your calculations for this question.

(t = 12, m = 2)

Since the payment is monthly, we need to find EMR.

A. 12.661%
B. 13.608%
C. 14.000%
D. 14.551%
E. 14.600%

$$EMR = \left(1 + \frac{0.13}{2}\right)^{\frac{2}{12}} - 1 = 0.010551094 = 1.055109\%$$

$$\Rightarrow APR = 1.055109\% \times 12 = 12.661\%$$

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20. A General Co. bond has an 8% coupon and pays interest semi-annually. The face value is $1,000 and the current market price is $1,010.50. The bond matures in 10 years. What is the yield to maturity?

A. 7.85%
B. 8.00%
C. 8.49%
D. 9.13%
E. 9.79%

Premium Bond ⇒ C% > YTM.
⇒ YTM < 8%.
(X2) = 7.85

or Using Financial Calculator
N = 20
I/Y = CPT = 3.9233
PV = −1,010.50
PMT = 40
FV = 1000

21. Which of the following are likely to reduce agency conflicts between stockholders and managers?

A. Paying managers a large salary.
B. Increasing the threat of corporate takeover.
C. A manager receives a lower salary but receives additional shares of the company's stock.
D. All of the statements above are correct.
E. Statements b and c are correct.

22. Suppose Seungho offered you the choice of two equally risky annuities, each paying $10,000 per year for five years. One is an ordinary (or deferred) annuity, the other is an annuity due. Which of the following statements is most correct? (Assume interest rate is positive)

A. The present value of the ordinary annuity must exceed the present value of the annuity due, but the future value of an ordinary annuity may be less than the future value of the annuity due.
B. The present value of the annuity due exceeds the present value of the ordinary annuity, while the future value of the annuity due is less than the future value of the ordinary annuity.
C. The present value of the annuity due exceeds the present value of the ordinary annuity, and the future value of the annuity due also exceeds the future value of the ordinary annuity.
D. If interest rates increase, the difference between the present value of the ordinary annuity and the present value of the annuity due remains the same.
E. Statements a and d are correct.

PV of Annuity Due = PV of Ordinary Annuity × (1+r)
FV of Annuity Due = FV of Ordinary Annuity × (1+r)
⇒ if r > 0, PV and FV of Annuity Due > PV or FV of Ord Annuity

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23. Which of the following investments will have the lowest future value at the end of 5 years? Assume that the effective annual rate for all investments is the same and positive.

A. A pays $50 at the end of every 6-month period for the next 5 years (a total of 10 payments).
B. B pays $50 at the beginning of every 6-month period for the next 5 years (a total of 10 payments).
C. C pays $500 at the end of 5 years (a total of one payment).
D. D pays $100 at the end of every year for the next 5 years (a total of 5 payments).
E. E pays $100 at the beginning of every year for the next 5 years (a total of 5 payments).

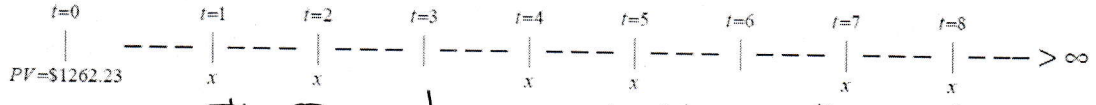
24. A $10,000 loan is to be amortized over 5 years, with annual end-of-year payments. Given these facts, which of these statements is most correct?

A. The annual payments would be larger if the interest rate were higher.
B. If the loan were amortized over 10 years rather than 5 years, and if the interest rate were the same in either case, the first payment would include less dollars of principal under the 10-year amortization plan.
C. The proportion of interest versus principal repayment would be the same for each of
the 5 payments.
D. The proportion of each payment that represents interest as opposed to repayment of principal would be lower if the interest rate were higher.
E. Statements A and B are correct.

PV of CF① $= \frac{x}{0.12}$, PV of CF② $= \frac{x}{1.12^3-1}$

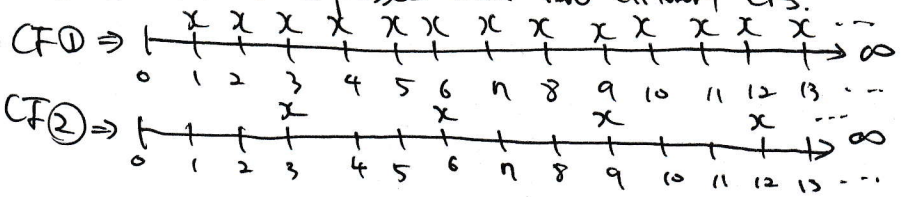
$\$1,262.23 = \text{PV of ①} - \text{PV of ②} = \frac{x}{0.12} - \frac{x}{1.12^3-1} \Rightarrow x = 215.259.$

25. The present value (t = 0) of the following cash flow stream is $1,262.23 when discounted at 12 percent annually. What is the value of the missing cash flows (x)? Assume the pattern of payments will continue in perpetuity (Every third year there is no payment).



A. $39.47
B. $151.47
C. $195.67
D. $215.26
E. $221.11

This CF can be expressed with two different CFs.



CF① − CF② = The Given CF!

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26. Which of the following is most correct?

A. The present value of a 5-year annuity due will exceed the present value of a 5-year ordinary annuity. (Assume that both annuities pay $100 per period and there is no chance of default. Interest rate is positive)
B. If a loan has a nominal rate of 10 percent, then the effective rate can never be less than 10 percent.
C. If there is annual compounding, then the effective, periodic, and nominal rates of interest are all the same.
D. Statements a and c are correct.
E. All of the statements above are correct.

27. Your company is planning to borrow $500,000 on a 5-year, 7 percent, annual payment, fully amortized term loan. What fraction of the payment made at the end of the fourth year will represent repayment of principal?

A. 93.46%
B. 87.34%
C. 81.62%
D. 76.29%
E. 71.29%

N = 5, I/Y = 7, PV = −500,000, PMT = CPT, FV = 0
PMT = 121,945.35 ⇒ 106,511.09 / 121,945.35

Year	Beg Bal	PMT	Interest	Princ. Repay	End Bal
4	113,969.62 + 121,945.35 / 1.07	121,945.35	220,914.41 × 0.07 = 15,433.58	106,511.09	113,969.62
5	121,945.35 / 1.07 = 113,969.62	121,945.35	969.62 × 0.07 = 7,975.73	113,969.62	0

⇐ From here

28. Hu Company currently (t = 0) earns $4.00 per share, and has a payout of 50 percent. Dividends are expected to grow at a constant rate of 7 percent per year. The required rate of return is 15 percent. The price of this stock would be estimated at (round up to the second decimal)

A. $10.67
B. $11.52
C. $22.86
D. $24.69
E. $26.75

$D_0 = \$4 \times 0.5 = \$2$
$g = 7\%$, $r = 15\%$
$\Rightarrow D_1 = 2 \times 1.07$

$\Rightarrow \frac{2 \times 1.07}{0.15 - 0.07} = \frac{2.14}{0.08} = \$26.75$

$\left(\frac{D_1}{r - g}\right)$

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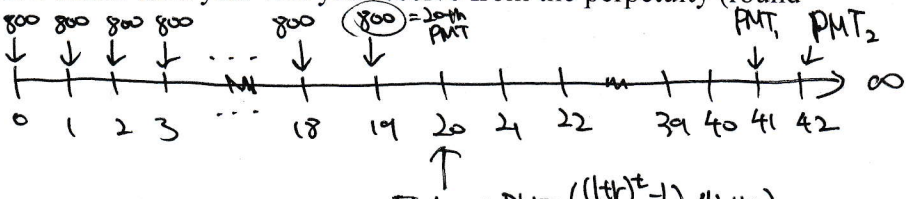
29. A firm purchases Class 10 equipment for $1,000,000 (CCA Rate 20%) for a 10-year project. What will be the CCA tax shield in year 4? The tax rate is 40%.

A. $40,960
B. $46,080
C. $69,120
D. $115,200
E. $200,000

Yr	Beg UCC	CCA	End UCC	TS
1	1,000,000	100,000	900,000	
2	900,000	180,000	720,000	
3	720,000	144,000	576,000	
4	576,000	115,200	460,800	46,080

$= 115{,}200 \times 0.4$

30. You are going to pay $800 into an account at the beginning of each year for the next 20 years. The account will then be left to compound for an additional 20 years. At the end of the 41st year you will begin receiving a perpetuity from the account. If the account pays 14%, how much each year will you receive from the perpetuity (round to nearest $1,000)?



A. $180,000
B. $170,000
C. $160,000
D. $150,000
E. None of the above

$$FVA_{20} = PMT\left(\frac{(1+r)^t - 1}{r}\right)(1+r)$$

$$= 800 \times \frac{1.14^{20} - 1}{0.14} \times 1.14 = 83{,}014.9342$$

$\Rightarrow$ Compound 20 more Years! $\Rightarrow FVA_{40} = 83{,}014.9342 \times (1.14)^{20} = 1{,}140{,}912.156$

$\Rightarrow$ This value is same as PV_{40} of the perpetuity $\Rightarrow 1{,}140{,}912.156 = \frac{PMT}{0.14}$

$PMT = 159{,}727.90 = 160{,}000$

31. Stock X and Stock Y sell for the same price in today's market. Stock X has a required return of 12 percent. Stock Y has a required return of 10 percent. Stock X's dividend is expected to grow at a constant rate of 5 percent a year, while Stock Y's dividend is expected to grow at a constant rate of 4 percent. Assume that the market is in equilibrium and expected returns equal required returns. Which of the following statements is most correct?

A. Stock X has a higher dividend yield than Stock Y
B. Stock Y has a higher dividend yield than Stock X.
C. One year from now, Stock X's price is expected to be higher than Stock Y's price.
D. Statements a and c are correct.
E. Statements b and c are correct.

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32. You purchased BetaX common shares for $50 per share one year ago. You have just received $2 dividend per share on these stocks. If your total return during the period is 12%, then what is the price of BetaX stocks today?

A. $48.00
B. $50.00
C. $52.00
D. $54.00
E. $56.00

Purchased $50

Return ⟨ Dividend Yield : $2
Capital Gain : ?

Total Return = DY + CG

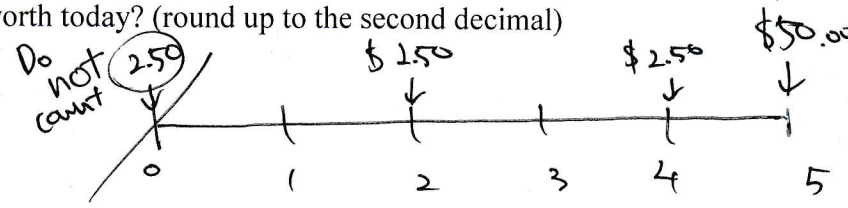
$6 = $2 + CG → CG = $4

Total Return = 12%
⇒ $50 × 0.12 = $6

Thus, the Stock's value is
$50 + $4 = $54

33. Concordia, Inc. is a very cyclical type of business, which is reflected in its dividend policy. The firm pays a $2.50 a share dividend every other year. The most recent dividend was just paid today. Five years from now, the company is repurchasing all of the outstanding shares at a price of $50 a share. At an 8% rate of return, what is this stock worth today? (round up to the second decimal)

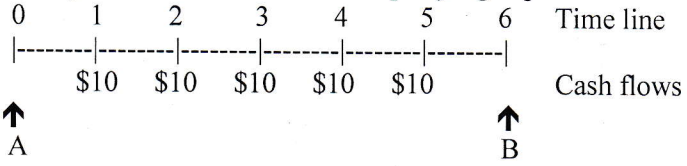
A. $34.03
B. $37.21
C. $38.01
D. $43.78
E. $48.09



$$P_0 = \frac{2.50}{(1.08)^2} + \frac{2.50}{(1.08)^4} + \frac{50.00}{(1.08)^5}$$

$$= 2.143347 + 1.835594 + 34.0292 \doteq 38.01$$

34. Study the time line and accompanying 5-period cash-flow pattern below.



The present value of the cashflows at Point A is the present value of a 5-period _____, whereas the future value at Point B is the future value of a 5-period _____.

A. ordinary annuity starting at 0; annuity due starting at 0.
B. annuity due starting at 0; ordinary annuity starting at 0.
C. ordinary annuity starting at 0; annuity due starting at 1.
D. annuity due starting at 1; annuity due starting at 1.
E. None of the above.

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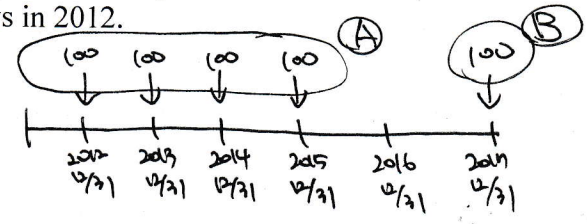
35. What is the value on 29/02/2012 of the following cash flows (Assume 10% EAR discount rate)? Note: Assume there were 365 days in 2012.

Date Cash received	Amount of Cash
31/12/2012	$100
31/12/2013	$100
31/12/2014	$100
31/12/2015	$100
31/12/2017	$100



PV of (A)+(B) = PV of the CF on 1/1/2012

A. $385.07
B. $382.16
C. $379.33
D. $321.86
E. None of the above.

$$PV \text{ of } (A) = 100\left[\frac{1-\frac{1}{(1.10)^4}}{0.10}\right] = 316.9865446$$

$$PV \text{ of } (B) = 100 \times \frac{1}{1.10^6} = 56.444.39$$

$$PV_{1/1/2012} = 373.433930 6$$

$$\Rightarrow PV_{29/2/2012} = PV_{1/1/2012} \times \frac{1}{(1+0.1)^{60/365}} = 369.330182$$

36. All other things being equal, which of following bonds has the highest interest rate risk?

A. 5% coupon rate and matures in 2017
B. 8% coupon rate and matures in 2017
C. 10% coupon rate and matures in 2017
D. 15% coupon rate and matures in 2017
E. We do not know with given information

Coupon Rate ↓
⇓
Interest Rate Risk ↑

37. Given no change in required returns, the price of a stock whose dividend is constant will (Assume the required rate of return for the stock is k% EAR):

A. Decrease over time at a rate of k%.
B. Increase over time at a rate of k%.
C. Decrease over time at a rate equal to the dividend growth rate.
D. Increase over time at a rate equal to the dividend growth rate.
E. Remain unchanged.

No change

$$P \text{ of Stock} = \frac{D}{r}$$

↓
No change

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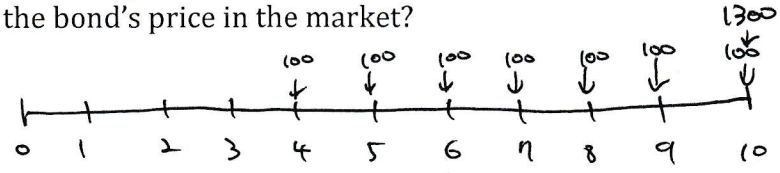
38. Westerfield Inc. Issues bonds with a 10-year maturity. The bond makes 10% annual coupon payment until the end of year 10. However, due to cash constraints, the firm makes no coupon payments on the bond for 3 years. Then the coupon payments will be resumed for the next 7 years. Finally, at maturity, the principal plus the coupons that were not paid during the first 3 years will be paid. (No interest will be paid on the deferred interest.) If the market rate is 8%, what should be the bond's price in the market?

A. $ 961.06
B. $ 987.76
C. $ 1,015.45
D. $ 1,184.42
E. $ 1,279.17



PV of Coupons : $\frac{100}{0.08} \times \left(1 - \frac{1}{(1+0.08)^7}\right) \times \frac{1}{(1+0.08)^3} = 413.298432$

PV of Face Value & Unpaid Coupons $= \frac{1000 + (100 \times 3)}{(1+0.08)^{10}} = 602.1515145$

+) ÷ 1,015.45

or, Usly Financial Calculator, N=7; I/Y=8; PMT=100; FV=1300; PV=CPT
⇒ PV = −1,279.117452 ⇒ discount 3 yrs : $\frac{1279.117}{1.08^3} \div 1,015.45$

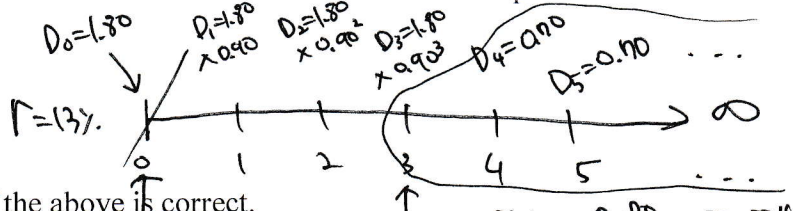
39. Common shares include which of the following characteristics:

I. The right to vote for the board of directors
II. Right to receive income before any creditors
III. Company has no legal obligation to pay dividend

A. I only
B. I and II
C. II and III
D. I and III
E. III only

40. White Kat Inc. is expecting a period of intense growth, so it has decided to retain more of its earnings to help finance that growth. As a result, it is going to reduce its annual dividend by 10% a year for the next three years. After that it will maintain a constant dividend of $0.70 a share. The company just paid a dividend of $1.80 per share. What is the market value of this stock if the required rate of return is 13%?

A. $8.87
B. $7.48
C. $7.22
D. $6.79
E. None of the above is correct.



Growing Dividends

$PV_0 = \frac{1.62}{0.13-(-0.10)}\left[1 - \left(\frac{1+(-0.10)}{1+0.13}\right)^3\right]$

BLUE $= 3.484876608 \ldots$ ①

$PV_3 = \frac{0.70}{0.13} = 5.3846 \ldots$

$PV_0 = \frac{P_3}{1.13^3} = 3.731808566 \ldots$ ②

⇒ ① + ② ≈ $7.22