23 RESIDUAL INCOME VALUATION

1. Which statement best describes the relationship between the residual income model and the free cash flow to equity model?
   (A) They do not reply on accounting assumptions.
   (B) Intrinsic value calculated by both should be the same if assumptions are the same.
   (C) They both discount a future stream of cash flow.

Pedro Fernandez, CFA, is part of a team of analysts working for DAB Inc. He is currently analyzing the equity value of Silo Inc., which he believes is under threat of takeover by its main rival Cart Inc. Fernandez decides to use a residual income model to value the company using the following information:

Silo Inc. is expecting a return on equity (ROE) of 14% over each of the next four years. Its current book value is $8.00 per share. Its dividend payout ratio is 40%. The required return on equity is 11%. Forecasted earnings in years 1 through 4 are equal to ROE times the beginning book value.

Fernandez is concerned over what persistence factor to use for the residual income valuation and so consults his colleague Oliver Chippy who makes the following comments:

Comment 1: The persistence factor needs to be between –1 and +1.

Comment 2: The persistence factor will be higher if there is a high dividend payout ratio and historically high residual income persistence in the industry.

As part of the valuation exercise Fernandez consults DAB's valuation handbook, which outlines when it is appropriate to use the residual income method and some of the necessary adjustments:

Statement 1: Due to the clean surplus violation, it is important to adjust net income for items that are charged directly to shareholders' equity. Such items include foreign currency translation gains and losses under the all- current method. If this cumulative translation adjustment (CTA) does not reverse over time then ROE can be forecasted without taking in to account the CTA.

Statement 2: The residual income model is appropriate when the terminal value forecast is highly uncertain and the expected free cash flows are negative for the foreseeable future.

2. Calculate the intrinsic value of the company using a residual income model, assuming that after four years, Silo's residual income will decay over time to zero with a persistence factor of 0.3.
   (A) $8.9.
   (B) $9.2.
   (C) $8.1.

3. Calculate the intrinsic value of the company using a residual income model, assuming that after four years, Silo's residual income will remain constant forever.
   (A) $8.8.
   (B) $11.4.
   (C) $10.7.

4. Regarding Oliver Chippy's comments on persistence factors:

	Comment 1	**Comment 2**
(A)	Incorrect	Correct
(B)	Incorrect	Incorrect
(C)	Correct	Incorrect

5. Regarding the handbook's statements on residual income:

	Statement 1	**Statement 2**
(A)	Correct	Correct
(B)	Correct	Incorrect
(C)	Incorrect	Correct

6. Midland Semiconductor has a book value of $10.50 per share. The company's return on equity is 20%, and its required return on equity is 17%. The dividend payout ratio is 30%. What is the value of the shares using a single-stage residual income model?
   (A) $31.50.
   (B) $10.50.
   (C) $21.00.

7. Market value added is calculated as:
   (A) market value of the company minus total capital.
   (B) net operating profit after taxes minus a charge for total capital.
   (C) market value of the company minus a charge for equity capital.

8. The total cumulative present value of Raver Industries' projected residual income (RI) over the next five years is £60 per share. Beyond that time horizon, a key analyst projects that the firm will sustain a RI of £11 per share, which is the RI for year 5. Given a cost of equity of 12%, what is the terminal value of the stock as of year 5?
   (A) £500.00.

(B) £91.67.

(C) £560.00.

9. A use of the residual income (RI) valuation approach is:

(A) providing a check of consistency between competing approaches like free cash flow of equity (FCFE) and dividend discount model (DDM).

(B) deferring value more than in competing valuation approaches.

(C) providing more reliable estimates of terminal value.

10. An analyst is considering the purchase of Delphos Machinery, which has a price-to-book value (P/B) ratio of 8.00. Return on equity (ROE) is expected to be 14%, current book value per share is $12.00, and the cost of equity is 11%. What growth rate is implied by the current P/B rate?

(A) 11.00%.

(B) 8.43%.

(C) 10.57%.

11. Analyst Brett Melton, CFA, is looking at two companies. Happy Cow Dairies has volatile cash flows, and its free cash flow is often negative. The company pays no dividends. Glitter and Gold, a maker of girls' clothing, has a fairly steady stream of earnings and cash flows but takes a lot of charges against equity. Is the residual income model suitable for valuing the two companies?

	Happy Cow Dairies	**Glitter and Gold**
(A)	No	No
(B)	No	Yes
(C)	Yes	No

12. The residual income approach is appropriate when:

(A) a firm pays high dividends that are quite stable.

(B) the clean surplus accounting relation is violated significantly.

(C) expected free cash flows are negative for the foreseeable future.

13. Assuming that the growth rate is less than the required rate of return (r), a decrease in initial book value will cause value in a residual income (RI) model to:

(A) increase.

(B) there is insufficient information to determine the effect on RI.

(C) decrease.

14. A common adjustment in calculating economic value added (EVA®) is to:

(A) capitalize and amortize research and development expenses.

(B) add back deferred taxes.

(C) treat capital leases as operating leases.

15. A residual income model would be least appropriate as a tool to measure which of the following?
   (A) Operating leverage.
   (B) Economic income.
   (C) Goodwill impairment.

16. Travel Advisors has earnings before interest and taxes (EBIT) of $200 million, interest expense of $83 million, taxes of $46.8 million, and total debt of $125 million. It is also financed with total equity of $850 million, which has a required rate of return of 12%. What is Travel Advisors' residual income?
   (A) A profit of $31.8 million.
   (B) A loss of $31.8 million.
   (C) A profit of $70.2 million.

17. Travel Advisors has earnings before interest and taxes (EBIT) of $200 million, interest expense of $83 million, taxes of $46.8 million, and total debt of $125 million. It is also financed with total equity of $650 million, which has a required rate of return of 12 percent. What is Travel Advisors' residual income? A:
   (A) profit of $70.2 million.
   (B) loss of $7.8 million.
   (C) loss of $70.2 million.

18. Economic value added (EVA®) is calculated as net operating profit after taxes minus:
   (A) a charge for equity capital.
   (B) a charge for total capital.
   (C) capital expenditures.

19. An argument for using the residual income (RI) valuation approach is that:
   (A) the models focus on economic rather than just on accounting profitability.
   (B) the models rely on accounting data that can be manipulated by management.
   (C) the clean surplus relation fails to hold.

20. In general, firms making aggressive accounting decisions will report book values that are:
   (A) lower.
   (B) higher.
   (C) consistent with fair market value.

21. Which of the following statements least accurately explains the relationship between the residual income (RI) model, the dividend discount model (DDM), and free cash flow to equity (FCFE):
(A) All the models discount future cash flows or income at the required rate of return.
(B) FCFE models use historical cash flows.
(C) RI models use an equity value from the balance sheet plus the present value of expected future residual income.

22. An analyst is considering the purchase of Rylinks, Inc., which has a price to book value (P/B) ratio of 6.00. Return on equity (ROE) is expected to be 13%, current book value per share is $13.00, and the cost of equity is 11%. What growth rate is implied by the current P/B rate?
(A) 10.60%.
(B) 0.40%.
(C) 11.00%.

23. Professor Cliff Webley made the following statements in his asset-valuation class:
Statement 1: "Residual income approaches generally model ROE as approaching zero over time."
Statement 2: "If actual return on equity equals required return on equity, the residual income model sets the company's proper market value equal to its book value."
Statement 3: "Using consistent assumptions, the single-stage residual income model should give you the same valuation as the Gordon Growth Dividend-discount model."
Which of Webley's statements is least accurate?
(A) Statement 2.
(B) Statement 3.
(C) Statement 1.

24. In general, firms making aggressive accounting decisions will report future earnings that are:
(A) lower.
(B) higher.
(C) inflation-adjusted.

25. The single-stage residual income model values a company at:
(A) book value times a factor determined by the discount rate.
(B) book value plus the present value of the firm's expected economic profits.
(C) book value plus the terminal value discounted at the weighted average cost of capital.

26. Which of the following characteristics of a company would make it unsuitable for residual income valuation analysis?
    (A) Book-value estimates are not reliable.
    (B) The forecast of terminal value is not reliable.
    (C) Free cash flows are negative and likely to remain so for some time.

27. Cognitive Products (CP) designs decision-making software. The book value of its assets is \$3.2 billion, which is financed with \$2.0 billion in equity and \$1.2 billion in debt. Its before-tax cost of debt is 6.5%, while its relevant tax rate is 34%. CP has a cost of equity of 12.46%. Its abbreviated income statement is:

Earnings before interest and taxes (EBIT)	\$213,000,000
Interest expense	(30,000,000)
Pretax income	183,000,000
Income tax expense	(62,220,000)
Net income	\$120,780,000

    The residual income (RI) for CP is closest to:
    (A) - \$128,420,000.
    (B) - \$128,369,000.
    (C) - \$128,471,000.

28. An investor is considering the purchase of Microscopics, which has a price to book value (P/B) ratio of 4.00. Return on equity (ROE) is expected to be 12%, current book value per share is \$12.00, and the cost of equity is 10%. What growth rate is implied by the current P/B rate?
    (A) 0.67%.
    (B) 10.00%.
    (C) 9.33%.

Sue Clifton, CFA, is a senior portfolio manager at Lewiston Investments, a small research firm. Clifton has been assigned to help new hire Ralph Rawls get acclimated to his new job as a stock analyst. She discovers early on that Rawls is not too familiar with residual income valuation, a tool for determining economic profitability.

Clifton explains the basics of the residual-income model and the clean surplus relationship that underpins the system.

Clifton explains to Rawls that analysts use assumptions to make the residual-income models easier to interpret. She goes on to identify four commonly used assumptions: Residual income can be expected to:

- disappear immediately
- decline gradually as return on equity (ROE) declines
- decline to the market average

After her initial review of residual income, Clifton gives Rawls a test. The information about CR Industries in Year X (in $ millions):

Invested capital	$225
Market capitalization	$231
Debt	$130
Sales	$90
Cost of goods sold (COGS)	$26
Selling, general & administrative (SG&A) expense	$10
Depreciation and amortization expense	$25
Interest expense	$6.5
Dividend expense	$6
Tax rate	40.0%
Pretax cost of equity	11.4$
Pretax cost of equity	5.00%

29. When a company's ROE is the same as the return required by the market, the stock's justified market value is closest to the:
   (A) book value plus residual income.
   (B) actual market value plus residual income.
   (C) book

30. Which of the following assumptions is not commonly used to simplify the calculation of residual income? Continuing residual income is expected to:
   (A) disappear immediately.
   (B) decline to the market average.
   (C) decline gradually as ROE declines.

31. Which of the following scenarios represents a violation of the clean surplus relationship?
   (A) A company stops paying dividends suddenly.
   (B) Unusual charges against income.
   (C) The market value of securities available for sale changes.

32. The economic value added (EVA) of CR Industries is closest to:
   (A) –$4.53 million.
   (B) –$8.13 million.
   (C) $2.67 million.

33. The residual income approach is NOT appropriate when:
   (A) expected free cash flows are negative for the foreseeable future.

(B) a firm does not pay dividends or the stream of payments is too volatile to be sufficiently predictable.

(C) the clean surplus accounting relation is violated significantly.

Jon Binkster, CFA, has decided to determine the value of the equity in Busicomb Inc. using the residual income method. Binkster has obtained financial statements for the year ended December 20x5. These financial statements are included in Exhibits 1-3 below.

Exhibit 1

Busicomb Inc. Annual Income Statement For the Year Ended December 31, 20x5 (in $ millions)	
Sales	721.9
Operating expenses	(417.0)
Operating profit	304.9
Gain on sale of fixed assets	9.6
Depreciation	(170.8)
Earnings before interest and tax	143.7
Interest expense	(40.3)
Pre-tax income	103.4
Income taxes	(31.0)
Net income	72.4

Exhibit 2

Busicomb Inc. Balance Sheet AS of December 31 ($ millions)		
	20X5	**20X4**
Current Asset		
Cash and equivalents	31.2	14.0
Accounts receivable	72.0	64.8
Inventories	501.7	453.7
Total current assets	604.9	532.5
Non-Current Assets		
Property, plant, and equipment	1138.7	982.7
Less: Accumulated depreciation	(370.0)	(216.0)
Net property, plant, and equipment	768.7	766.7
Total assets	1373.6	1299.2
Current Liabilities		

Accounts payable	60.1	62.5
Notes payable	30.0	20.0
Total current liabilities	90.1	82.5
Non-Current Liabilities		
Long term debt	576.0	588.0
Total liabilities	666.1	670.5
Shareholders' Equity		
Common equity	384.0	360.0
Retained earnings	323.5	268.7
Total equity	**707.5**	**628.7**
Total liabilities and equity	1373.6	1299.2

Exhibit 3

Busicomb Inc. Cash Flow Statement For the Year ended December 31, 20x5 (in $millions)		
Cash Flow from Operating Activities		
Net income		72.4
Depreciation		170.8
Gain on sale of fixed assets		(9.6)
Change in Working Capital		
(Increase) Decrease in accounts receivable	(7.2)	
(Increase) Decrease in inventories	(48.0)	
Increase (Decrease) in accounts payable	(2.4)	
Net change in working capital		(57.6)
Net cash from operating activities		176.0
Cash Flow from Investing Activities		
Purchase of property, plant, and equipment	(183.2)	
Proceeds on disposal of plant and equipment	20.0	
Net cash from investing activities		(163.2)
		12.8
Cash Flow from Financing Activities		
Change in debt outstanding	(2.0)	
Change in common stock	24.01	
Payment of cash dividend	(17.6)	
Net cash from financing activities		4.4

Net change in cash and cash equivalents		17.2
Cash at beginning of period		14.0
Cash at end of period		31.2

You can assume for the following question that the ROE of Busicomb Inc. is 12% and the cost of equity is 13% and the long-term sustainable rate of growth is 7.5%.

Binkster is concerned about the rate of growth he has assumed for the model and is aware that the residual income model can be used to calculate the implied rate of growth. He has compiled the following data for Entrebus Inc., a competitor, and wants to use this to calculate the implied rate of growth for Entrebus Inc.:

The price to book ratio	2.50
ROE	13%
Current book value per share	$8.00
Cost of equity	11%

Despite the issues encountered with post levered residual income Binkster is convinced that value based management approaches will prove beneficial in the analysis of Busicomb. His attention alights on another method referred to as Economic Value Added (EVA). Binkster makes the following estimates for Busicomb Inc. for 20x6:

EBIT $150m

Tax rate 30%

Cost of equity 12%

Cost of debt 7%

The target debt to equity ratio for next year will be 1.

The invested capital is to be calculated as long-term debt plus stockholders' equity (using the information from the Exhibits 1-3).

Jon Binkster and a colleague, Bob Slacker, were discussing the merits of the residual income approach. Bob commented that the unrealized gains or losses relating to available for sale securities are reported in comprehensive income and not the income statement and that this results in earnings being an inaccurate measure of returns to investors. Bob states that the book value of equity is not affected.

Binkster commented that including the gains or losses from one-off asset sales in income would distort the estimation of future residual earnings and therefore these gains and losses should be excluded. However, there is no need to adjust the book value of equity.

34. Calculate the total value of the common stock in Busicomb Inc. at 31 December 20x5 using the constant growth residual income valuation model. Work to the nearest $m.

(A) $836m.

(B) $579m.

(C) $708m.

35. Jon is comparing the different equity valuation models. He believes that the residual income model offers some advantages to the analyst over the other models. Which of the following is an advantage of the residual income model?

(A) It does not require the clean surplus relationship to hold.

(B) The intrinsic value is not dominated by the terminal value.

(C) No adjustments to the financial data is required.

36. Use the information above and the residual income model to calculate the implied growth rate in Entrebus Inc.

(A) 13.33%.

(B) 7.67%.

(C) 9.67%.

37. What is the best estimate of the EVA for Busicomb for 20x6?

(A) $0.

(B) –$3.46m.

(C) –$5.84m.

38. Bob's comment is best described as:

(A) correct.

(B) incorrect as unrealized gains or losses are reported in the income statement.

(C) incorrect as both the net income and book value of equity are incorrect stated.

39. Binkster's comment is best described as:

(A) correct.

(B) incorrect as gains or losses should not be adjusted.

(C) incorrect as the book value of equity should be adjusted.

40. In a single-stage residual income model for a firm with return on equity (ROE) greater than the required rate of return, which statement is least accurate?

(A) The justified price-to-book value (P/B) ratio will be greater than one.

(B) Free cash flow to equity will be positive.

(C) Market value will be greater than book value.

41. If a multistage residual income model incorporates a persistence factor of zero, the analyst is most likely assuming that residual income will:

(A) fall to zero immediately.

(B) decline to zero over time.

(C) persist at the current level forever.

42. Red Shoes's recent financial statements reported a book value of $11.00 per share; its required rate of return is 9%. Analyst Tony Giancola, CFA, wants to calculate the company's intrinsic value using a multistage residual income with a high-growth RI for the next 5 years. Giancola creates the following estimates:

- PV of interim high-growth RI for the next 5 years is $ 2.90
- At the end of year 5, the PV of continuing RI is $7.00
- Estimated Book Value in 5 years is $14.00

Which of the following is closest to the current intrinsic value of Red Shoes?

(A) $18.45.

(B) $20.90.

(C) $9.90.

43. Assuming that the growth rate is less than the required rate of return (r), an increase in return on equity (ROE) will cause value in a residual income (RI) model to:

(A) decrease if ROE is greater than the required rate of return.

(B) increase if ROE is greater than the required rate of return.

(C) there is insufficient information to derive the effects of increasing ROE

44. Advanced Instruments reported the following for the end of its fiscal year:

- Revenues = $50.3 million.
- Earnings per share = $0.68.
- Dividends per share = $0.17.
- Shares outstanding = 5 million.
- Tax rate = 40%.

Book value per share was $4 at the beginning of the year. If the required rate of return is 15%, what is the value of the shares using a single-stage residual income model?

(A) $6.01.

(B) $4.78.

(C) $7.56.

45. Krieger String & Twine expects to generate a return on equity (ROE) of 13.6% in each of the next five years. The required ROE is 8.7%. Current book value is $12.40 per share and the firm pays no dividends. Krieger previously assumed residual income falls to zero immediately after five years, but has now decided to recalculate its estimated value using a persistence factor of 35%. The difference between the new valuation and the old one is closest to:

(A) $0.64 per share.

(B) $0.16 per share.

(C) $0.32 per share.

46. SmallCo has the following characteristics:
- Long-term debt = $55 million
- Equity = $45 million
- WACC = 11%
- EBIT = $10 million
- Marginal tax rate = 30%

SmallCo's economic value added is closest to:

(A) +$1 million.

(B) -$1 million.

(C) -$4 million.

47. Brown Manufacturing's recent financial statements reported a book value of $9.50 per share; its required rate of return is 10%. Analyst Tony Giancola, CFA, wants to calculate the company's intrinsic value using a multistage residual income with a high-growth RI for the next 5 years. Giancola creates the following estimates:
- PV of interim high-growth RI for the next 5 years is $3.10
- At the end of year 5, the PV of continuing RI is $10.00
- Estimated Book Value in 5 years is $25.00

Which of the following is closest to the current intrinsic value of Brown Manufacturing?

(A) $18.81.

(B) $13.10.

(C) $22.60.

48. Reported accounting data are most likely to bias an estimate of residual income when:

(A) standards allow charges directly to stockholders' equity while bypassing the income statements.

(B) standards allow charges directly to stockholders' equity that are also reflected on the income statements.

(C) the clean surplus relation holds.

You are the chairperson of the board of Retty Inc. You are reviewing the statistics on management performance over the past three years.

The accounts of the firm are summarized below:

Exhibit 1: Income Statement

	20x4 $m	20x5 $m	20x6 $m
Sales	40.2	42.	43.9
Cost of goods sold (11.6) (12.3) (12.8)	.(11.6).	(12.3).	.(12.8).

Gross profit	28.6	30.0	31.1
Administrative expenses	.(10.0)	.(10.)0	.(3.0).
Earnings before interest and tax	18.6	20.0	28.1
Interest	.(6.3).	.(6.3).	.(4.2).
Earnings before tax	12.3	13.7	23.9
Tax	.(5.1).	.(5.6).	.(11.4).
Net income	7.2	8.1	12.5
Dividends	.(3.0).	.(3.1).	.(3.2).
Retained income	4.2	5.0	9.3

Exhibit 2: Balance Sheet at 31 December

	20x3 $m	20x4 $m	20x5 $m	20x6 $m
Total assets	100.0	104.2	109.2	110.5
Liabilities	24.0	24.0	24.0	16.0
Common stock	20.0	20.0	20.0	20.0
Additional paid up capital	10.0	10.0	10.0	10.0
Retained income	46.0	50.2	55.2	64.5
	100.0	104.2	106.2	110.5
Market value equity (31 December)	167	203	199	145

- Beta of firm = 1
- Debt holders' required rate of return: 5%
- Equity holders' required rate of return: 15%
- After tax WACC: 12.5%
- Tax rate: 45%

Notes:

1. Administrative expenses include goodwill write downs of $7m in 20x4 and 20x5- goodwill is fully written off by the end of 20x5
2. $8m of debt was redeemed at the start of 20x6
3. Other than the debt redeemed in 20x6, the liabilities consist mostly of long-term debt valued approximately at book value
4. Replacement value of assets is roughly equal to book value minus 4%

49. Calculate the "traditional" measure of Return on (opening) Equity for 20x6.
   (A) 10.9%.
   (B) 13.2%.
   (C) 14.7%.

50. Calculate Retty's EVA® for 20x6 based on end-of-year invested capital. (Ignore the potential problem created by the write-off of goodwill.)

(A) $1.3 million negative.
(B) $1.2 million negative.
(C) $1.6 million positive.

51. Big Sky Ranches reported the following for the end of its fiscal year:
- Revenues = $40.8 million.
- Pretax income = $8.6 million.
- (beginning-of-the year) Assets = $53.2 million.
- (beginning-of-the year) Liabilities = $27.8 million.
- Dividends per share = $0.35.
- Shares outstanding = 8 million.
- Tax rate = 35%.

The beta for Big Sky Ranches is 1.2, the current risk-free rate is 4.5%, and the expected return on the market is 12.5%. What is the value of the shares using a single-stage residual income model?
(A) $23.23.
(B) $11.28.
(C) $8.10.

52. Which of the following is the most appropriate tool to measure managerial effectiveness, goodwill impairment, and equity value?
(A) Residual income.
(B) Free cash flow to the firm.
(C) Gordon growth model.

Geremiah Analytics provides litigation consulting services to the intellectual property industry. They specialize in patent infringement liability and software valuation. Mariah Hofstedt, CFO of Geremiah, projects that the firm will earn $3 million pre-tax income this year. Additional selected financial data on Geremiah are presented below.

Table 1: Selected Financial Data for Geremiah Analytics

Total assets	$40 million
Debt/assets	60%
Average coupon on debt	8%
Cost of equity	12%
Tax rate	40%

Hofstedt has not been happy with the firm's financial performance. She would like to increase return on equity (ROE) and improve revenue growth, and is considering various ways to deploy Geremiah's cash flow in order to meet these two goals. One possibility is using some of Geremiah's cash flow to make a strategic acquisition.

Hofstedt has been looking at a smaller boutique firm, Logiciels LaMarre, which provides consulting services to the software industry. Hofstedt and a Geremiah Analytics valuation team have performed a preliminary valuation on Logiciels LaMarre using a free cash flow to equity (FCFE) model. However, Theodore LaMarre, CEO of Logiciels LaMarre, is not pleased with the resultant valuation that Geremiah has placed on his firm.

Rather than argue about the inputs of the free cash flow (FCF) model, LaMarre takes the position that FCFE is an inappropriate model for valuing Logiciels LaMarre. He cites the firm's rapid growth and resultant need for capital investment as reasons that valuing the firm on projections of FCFE is not reliable.

LaMarre wants Geremiah to value Logiciels LaMarre using the residual income approach.

LaMarre asserts, "The fact that our terminal value can be calculated with a high degree of certainty makes the use of a residual value model more appropriate than use of a FCFE model." Hofstedt counters that the residual income approach is not in LaMarre's interest. She points out, "Value tends to be recognized later in a residual income approach than in a FCFE approach."

There is, however, one point on which LaMarre and Hofstedt agree. They both recognize that competitive forces in the industry will drive the current high ROE of Logiciels LaMarre down to the cost of equity capital over time. Hofstedt concludes, "Given the assumption of a decline in ROE, we should use a persistence factor between zero and one." LaMarre disagrees, saying, "The assumption about ROE means that the present value of the continuing residual income at Logiciels LaMarre is the current residual income divided by the cost of equity capital.

53. Regarding their statements about the forecast error in residual income models and when they AL recognize value, who is correct?

	LaMarre	Hofstedt
(A)	Incorrect	Incorrect
(B)	Correct	Correct
(C)	Correct	Incorrect

54. Which of the following is least likely to characterize the difference between a residual income model and a FCFE model?

(A) Terminal value represents a higher proportion of intrinsic value in a residual income model than in a dividend discount model (DDM).

(B) A residual income model is applicable to a firm that does not have FCF.

(C) Inputs to a residual income model are more easily manipulated by management.

55. The residual income of Geremiah Analytics is closest to:

(A) –$120,000.

(B) $120,000.

(C) $1,080,000.00

56. Regarding their statements about ROE and residual income, who is correct?

	LaMarre	Hofstedt
(A)	Correct	Incorrect
(B)	Incorrect	Correct
(C)	Correct	Incorrect

57. Calculate Retty's residual income for 20x6 based on end-of-year equity.

(A) –$1.7 million.

(B) $0.7 million.

(C) $2.5 million.

58. Calculate Retty's Market Value Added (MVA) for 20x6.

(A) $9.3 million.

(B) $12.5 million.

(C) $50.5 million.

59. Which of the following statements would be most likely to explain a decrease in MVA for 20x7?

(A) The market expectation is that Retty's results will show an underperformance relative to its sector.

(B) In 20x6 the management produce negative Economic Value Added (EVA®).

(C) The market expectation is that Retty's future Economic Value Added (EVA®) is lower than the previous expectation.

60. The chairman has drawn up budgetary forecasts for 20x7 that suggest residual income will be $5m for the year ahead. Management plans for the medium term lead you to believe that this will increase by 5% per annum for the foreseeable future. Using the residual income method, value Retty's equity as at 31st December 20x6.

(A) $144.5 million.

(B) $147.0 million.

(C) $177.2 million.

61. Creative Gardening is expected to have a return on equity (ROE) of 13% for the next five years. and slightly lower thereafter. Its current book value per share as of the beginning of year 1 (i.e. the end of year 0) is $7.50 per share and its required rate of return is 10%. The premium over book value at the end of five years is expected to be 30%. All earnings are reinvested. The sum of the present values of the residual income estimates over the next five years is $1.10. The projected ending book value in year 5 is $13.83. What is the value of Creative Gardening using these inputs?

(A) $11.18.

(B) $8.60.

(C) $13.83.

62. The present value of Forman Electronics' projected residual income (RI) for the next five years is £80 per share. Beyond that time horizon a key analyst projects that the firm will sustain a RI of £17 per share, which is the RI for year 5. Given a cost of equity of 13%, what is the terminal value of the stock as of year 5?

(A) £19.96.

(B) £130.77.

(C) £500.00.

63. A common assumption regarding continuing residual income (RI) is that RI:

(A) falls to the average industry level.

(B) manifests a generally increasing trend indefinitely.

(C) declines to zero as return on equity (ROE) drops to the cost of equity over time.

64. Which description of the relationship among residual income, dividend discount (DDM) and free cash flow to equity (FCFE) models is least accurate?

(A) Residual income differs from DDM and FCFE in that residual income starts with book value.

(B) The different models should result in different intrinsic values because of the theoretical differences in the models.

(C) Residual income differs from DDM and FCFE in that it discounts income rather than cash.

65. An argument for using the residual income (RI) valuation approach is that residual income valuation:

(A) reduces the problem of terminal value dominating total value.

(B) facilitates comparisons between divisions.

(C) encourages company managers to maximize ROI.

66. The residual income approach is appropriate when:

(A) a firm does not pay dividends or the payments are too volatile to be sufficiently predictable.

(B) the clean surplus accounting relation is violated significantly.

(C) a firm pays high dividends that are quite stable.

67. Continuing residual income is defined as the:

(A) residual income that is expected beyond the initial forecast time horizon.

(B) residual income that forces the net present value to zero.
(C) permanent as opposed to the transitory part of residual income.

68. An argument against using the residual income (RI) valuation approach is that:
(A) the models focus on economic rather than just on accounting profitability.
(B) the models rely on accounting data that can be manipulated by management.
(C) terminal value does not dominate total present value as is the case in dividend and free cash flow valuation models.

69. Among the various price multiples, the residual income model is most closely linked to which of the following?
(A) Price to free cash flow (P/FCF).
(B) Price to book value (P/B).
(C) Price to earnings (P/E).

Ilias Chair has read a recent article on the internet which championed the benefits of using a residual income model to calculate company valuations. He is having trouble understanding the model, and has presented you with the following assumptions for a hypothetical company that the article used, and would like to know the valuation it results in.

RI Inc.

Return on equity	4.6%
Retention rate	0.6
Current book value per share	$8.50
Required rate of return for equity holders	4%

Chair currently uses dividend valuation methodology to compute intrinsic value. He is interested to know if residual income models could be adapted and used instead of the dividend discount model (DDM). Chair has two main concerns about using it instead of the DDM:

Concern 1: The residual income model seems to be to some extent dependent on book value per share, which may be calculated differently according to the accounting policy choices a firm makes.

Concern 2: It's a shame that all residual income models assume constant growth in economic profit. It seems unreasonable to assume that economic profits can be sustained let alone grow at a constant rate. The models don't seem to factor in the impact of competition on future residual income.

Ilias is also trying to assess a fundamental value of yet another company in the sector, Topper Inc., using the residual income model. He believes that the current value of

Topper is primarily based on the current book value plus the present value of residual income for the next three years.

Ilias estimates the required return to equity holders to be 4% pa. The current book value per share is $8.50.

He has estimated the EPS forecasts for the next three years to be $1.50, $1.40, and $1.35 respectively. Her estimates for the dividend per share for the next three years are $0.70, $0.75, and $0.80 respectively.

Chair does have concerns about the use of a residual income model for Topper.
Ilias has extracted the following from the Accounting Policies Note in Topper's most recent annual report:

Foreign Subsidiaries:

Topper Inc. has two foreign subsidiaries which are both based in Europe and for the purposes of the group accounts, Topper has assumed that the Euro is the functional currency for both, and hence, used the current rate method for translation into the group reporting currency (U.S. dollars).

Financial Instruments:

Topper Inc. owns $3 million of par value bonds issued by Pastini Inc., which are due to mature in 2x18. The group intends to hold the bonds until 2x18 and hence they have been classed as amortized cost on the Group Balance Sheet.

70. Using the assumptions given for RI Inc., and using a single stage (constant growth) model the hypothetical company shares would be valued at:
(A) $12.61.
(B) $9.78.
(C) $10.86.

71. Is Chair correct in his stated concerns?
(A) Incorrect in both.
(B) Correct in Statement 1 only.
(C) Correct in Statement 2 only.

72. Using Chair's estimates and assumptions, what would the value per share of Topper be estimated at, using the residual income model:
(A) $9.23.
(B) $10.20.
(C) $11.41.

73. Which of the accounting policy note extracts identified by Chair would cause an issue with the "clean surplus relationship" when using the residual income model for Topper Inc.?
(A) Foreign Subsidiaries note.
(B) Financial Instruments note.

(C) Both the Foreign Subsidiaries and the Financial Instruments note.

74. Residual income is defined as:
   (A) net income less a charge for capital investment.
   (B) operating income plus depreciation and amortization.
   (C) net income less a charge that measures stockholders' opportunity cost in generating that income.

75. The present value of GB Industries' projected residual income (RI) for the next five years is 70 per share. Beyond that time horizon, a key analyst projects that the firm will sustain a RI of 15 per share, which is the RI for year 5. Given a cost of equity of 12%, what is the terminal value of the stock as of year 5?
   (A) £560.00.
   (B) £500.00.
   (C) £125.00.

76. An investor is considering the purchase of Robust Econometrics, Inc., which has a price-to-book (P/B) value ratio of 4.50. Return on equity (ROE) is expected to be 14%, the current book valuer per share (BVPS) is Sf 22.50, and the cost of equity is 12%. The growth rate implied by the current P/B ratio is closest to:
   (A) 12.57%.
   (B) 11.43%.
   (C) 8.00%.