20 DISCOUNTED DIVIDEND VALUATION

1. The value per share for Burton, Inc. is $32.00 using the Gordon Growth model. The company paid a dividend of $2.00 last year. The estimates used to calculate the value have changed. If the new required rate of return is 12.00% and expected growth rate in dividends is 6%, the value per share will increase by:
   (A) 9.51%.
   (B) 4.17%.
   (C) 10.42%.

2. Which of the following is least likely a potential problem associated with the three-stage dividend discount model (DDM)? The:
   (A) stable period payout ratio may be too high resulting in an extremely low value.
   (B) beta in the stable period is too high, resulting in an extremely low stock value.
   (C) high-growth and transitional periods are too long, resulting in an extremely high stock value

Bernadine Nutting has just completed several rounds of job interviews with the valuation group, Ancis Associates. The final hurdle before the firm makes her an offer is an interview with Greg Ancis, CFA, the founder and senior partner of the group. He takes pride in interviewing all potential associates himself once they have made it through the earlier rounds of interviews, and puts candidates through a grueling series of tests. As soon as Nutting enters his office, Ancis tries to overwhelm her with financial information on a variety of firms, including Turbo Financial Services, Aultman Construction, and Reality Productions.

Ancis then moves on to Turbo Financial Services. Ancis has been following Turbo for quite some time because of its impressive earnings growth. Earnings per share have grown at a compound annual rate of 19% over the past six years, pushing earnings to $10 per share in the year just ended. He considers this growth rate very high for a firm with a cost of equity of 14%, and a weighted average cost of capital (WACC) of only 9%. He's especially impressed that the firm can achieve these growth rates while still maintaining a constant dividend payout ratio of 40%, which he expects the firm to continue indefinitely. With a market value of $55.18 per share, Ancis considers Turbo a strong buy.

Ancis believes that Turbo will have one more year of strong earnings growth, with EPS rising by 20% in the coming year. He then expects EPS growth to fall 5 percentage points per year for each of the following two years, and achieve its long-term sustainable growth rate of 5% beginning in year four.

Finally, Ancis turns to Aultman Construction, trading at $22 per share (with current EPS of $2.50 and a required return of 18%), and Reality Productions, which currently trades at $30 per share. Reality Production's current dividend is $1.50, but the historical dividend growth rate has been a stable 10%. Dividend growth is expected to decline linearly over six years to 5%, and then remain at 5% indefinitely.

3. Which of the following statements is least accurate? The two-stage DDM is most suited for analyzing firms that:
   (A) are in an industry with low barriers to entry.
   (B) are expected to grow at a normalized rate after a fixed period of time.
   (C) own patents for a very profitable product.

4. If the expected return on the equity market is 10% and the risk-free rate is 3%, the required return on an asset with beta of 0.6 is closest to:
   (A) 6.0%.
   (B) 7.2%.
   (C) 9.0%.

5. If Cantel, Inc., has current earnings of $17, dividends of $3.50, and a sustainable growth rate of 11%, what is its return on equity (ROE)?
   (A) 11.91%.
   (B) 13.85%.
   (C) 17.64%.

6. Given that a firm's current dividend is $2.00, the forecasted growth is 7%, declining over three years to a stable 5% thereafter, and the current value of the firm's shares is $45, what is the required rate of return?
   (A) 7.8%.
   (B) 10.5%.
   (C) 9.8%.

7. Heather Callaway, CFA, is concerned about the accuracy of her valuation of Crimson Gate, a fast-growing telecommunications-equipment company that her firm rates as a top buy. Crimson currently trades at $134 per share, and Callaway has put together the following information about the stock:

Most recent dividend per share	$0.55
Growth rate, next 2 years	30%

Growth rate, after 2 years	12%
Trailing P/E	25.6
Financial leverage	3.4
Sales	$1198 per share
Asset turnover	11.2
Estimated market rate of return	13.2%

Callaway's employer, Bates Investments, likes to use a company's sustainable growth rate as a key input to obtaining the required rate of return for the company's stock.

Crimson's sustainable growth rate is closest to:

(A) 16.6%.

(B) 13.2%.

(C) 14.8%.

8. The current market price per share for High-on-the-Hog, Inc. is $52.50, and an analyst is using the Gordon Growth model to determine whether this is a fair price. The company paid a dividend of $3.00 last year on earnings of $4.50 a share. If the required rate of return is 11.00% and the expected grown rate in earnings and in dividends is 5%, the current market price is most likely:

(A) undervalued.

(B) correctly valued.

(C) overvalued.

9. In using the capital asset pricing model (CAPM) to determine the appropriate discount rate for discounted cash flow models (DCFs), the asset's beta is used to determine the amount of:

(A) equity premium.

(B) risk-free rate applicable to the time period of the investment.

(C) the expected return in addition to the return required by the risk of the position.

10. A company's stock beta is 0.76, the market return is 10%, and the risk-free rate is 4%. The stock will pay no dividends for the first two years, followed by a $1 dividend and $2 dividend, respectively. An investor expects to sell the stock for $10 at the end of four years. What price is an investor willing to pay for this stock?

(A) $9.42.

(B) $11.03.

(C) $10.16.

11. Which of the following would be least appropriate to value using the Gordon growth model?

(A) Water utility companies.

(B) Broad-based equity indices.

(C) Profitable rapidly-growing companies.

12. Obsidian Glass Company has current earnings of $2.22, a required return of 8%, and the present value of growth opportunities (PVGO) of $8.72. What is the current value of Obsidian's shares?

(A) $27.75.

(B) $36.47.

(C) $10.94.

13. What is the implied required rate of return for Reality Productions?

(A) 12.50%.

(B) 11.00%.

(C) 11.75%.

14. Based upon its current market value, what is the implied long-term sustainable growth rate of Turbo Financial Advisors?

(A) 4.0%.

(B) 0.3%.

(C) 19.0%.

15. What is the present value of Aultman's future investment opportunities as a percentage of the market price?

(A) 13.9%.

(B) 8.1%.

(C) 36.9%.

16. CAB Inc. just paid a current dividend of $3.00, the forecasted growth is 9%, declining over four years to a stable 6% thereafter, and the current value of the firm's shares is $50, what is the required rate of return?

(A) 10.5%.

(B) 9.8%.

(C) 12.7%.

17. An analyst for a small European investment bank is interested in valuing stocks by calculating the present value of its future dividends. He has compiled the following financial data for Ski, Inc.:

Year	Earnings per Share (EPS)
Year 0	$4.00
Year 1	$6.00

Year 2	$9.00
Year 3	$13.50

Note: Shareholders of Ski, Inc., require a 20% return on their investment in the high growth stage compared to 12% in the stable growth stage. The dividend payout ratio of Ski, Inc., is expected to be 40% for the next three years. After year 3, the dividend payout ratio is expected to increase to 80% and the expected earnings growth will be 2%. Using the information contained in the table, what is the value of Ski, Inc.'s, stock?

(A) $71.38.

(B) $39.50.

(C) $43.04.

18. Kyle Star Partners is expected to have earnings in year five of $6.00 per share, a dividend payout ratio of 50%, and a required rate of return of 11%. For year 6 and beyond the dividend growth rate is expected to fall to 3% in perpetuity. Estimate the terminal value at the end of year five using the Gordon growth model.

(A) $27.27.

(B) $38.63.

(C) $37.50.

19. Financial models such as the DDM represent a cornerstone of equity valuation from an academic standpoint. But in the real life, many analysts do not use the DDM. The least likely reason for this is:

(A) modern research has shown that many of the old standbys do not work.

(B) some of the assumptions required are impractical.

(C) the model lacks the flexibility required to model values in the real world.

20. In what stage of growth would a firm most likely NOT pay

(A) Initial growth stage.

(B) Transition stage.

(C) Declining stage.

21. Ambiance Company has a current market price of $42, a current dividend of $1.25 and a required rate of return of 12%. All earnings are paid out as dividends. What is the present value of Ambiance's growth opportunities (PVGO)?

(A) $38.85.

(B) $31.58.

(C) $16.71.

22. Given an equity risk premium of 3.5%, a forecasted dividend yield of 2.5% on the market

index and a U.S. government bond yield of 4.5%, what is the consensus long-term earnings growth estimate?

(A) 5.5%.

(B) 10.5%.

(C) 8.0%.

23. What is the value of a fixed-rate perpetual preferred share (par value $100) with a dividend rate of 11.0% and a required return of 7.5%?

(A) $147.

(B) $138.

(C) $152.

24. The Gordon growth model is well suited for:

(A) biotech firms.

(B) telecom companies.

(C) utilities.

25. An analyst has forecast that Hapex Company, which currently pays a dividend of $6.00, will grow at a rate of 8%, declining to 5% over the next two years, and remain at that rate thereafter. If the required return is 10%, based on an H-model what is the current value of Hapex shares?

(A) $131.17.

(B) $129.60.

(C) $126.24.

26. If the value of an 8%, fixed-rate, perpetual preferred share is $134, the risk free rate is 3%, and the par value is $100, the required rate of return is closest to:

(A) 7%.

(B) 9%.

(C) 6%.

27. The H model will NOT be very useful when:

(A) a firm has low or no dividends currently.

(B) a firm is growing rapidly.

(C) a firm has a constant payout policy.

28. Given that a firm's current dividend is $2.00, the forecasted growth is 7% for the next two years and 5% thereafter, and the current value of the firm's shares is $54.50, what is the required rate of return?

(A) Can't be determined.
(B) 10%.
(C) 9%.

29. Zephraim Axelrod, CFA, is trying to determine whether Allegheny Mining is a good investment. He decides to use the Gordon Growth model to calculate how much dividend growth shareholders can expect. To that end, he determines the following:

- Share price: $18.12.
- Dividend: $0.32 per share.
- Beta: 1.94.
- Industry average estimated returns: 15%.
- Risk-free rate: 5.5%.
- Equity risk premium: 6.3%

Based only on the information above, the implied dividend growth rate is closest to:

(A) 19.89%.
(B) 15.68%.
(C) 10.27%.

30. An investor computes the current value of a firm's shares to be $34.34, based on an expected dividend of $2.80 in one year and an expected price of the share in one year to be $36.00. What is the investor's required rate of return on this investment?

(A) 10%.
(B) 11%.
(C) 13%.

31. Dynamite, Inc., has current earnings of $26, current dividend $2, and a returned on equity of 18%. What is its sustainable growth?

(A) 14.99%.
(B) 13.37%.
(C) 16.62%.

32. Tri-coat Paints has a current market value of $41 per share with an earnings of $3.64. What is the present value of its growth opportunities (PVGO) if the required return is 9%?

(A) $0.56.
(B) $3.92.
(C) $1.27.

33. Which of the following dividend discount models has the limitation that a sudden decrease to the lower growth rate in the second stage may NOT be realistic?

(A) Gordon growth model.
(B) H model.
(C) Two-stage dividend discount model.

34. Jand, Inc., currently pays a dividend of $1.22, which is expected to grow at 5%. If the current value of Jand's shares based on the Gordon model is $32.03, what is the required rate of return?
(A) 8%.
(B) 9%.
(C) 7%.

35. Which of the following actions will be least helpful for an analyst attempting to improve the predictive power of his scenario analysis?
(A) Limiting deviations from the core model.
(B) Acquiring more precise inputs.
(C) Using a spreadsheet rather than a calculator.

36. An analyst has forecasted dividend growth for Triple Crown, Inc., to be 8% for the next two years, declining to 5% over the following three years, and then remaining at 5% thereafter. If the current dividend is $4.00, and the required return is 10%, what is the current value of Triple Crown shares based on a three-stage model?
(A) $92.23.
(B) $91.11.
(C) $73.68.

37. Suppose the equity required rate of return is 10%, the dividend just paid is $1.00 and dividends are expected to grow at an annual rate of 6% forever. What is the expected price at the end of year 2?
(A) $28.09.
(B) $29.78.
(C) $27.07.

38. A firm currently has earnings of $3.14, and pays a dividend of $1.00, which is expected to grow at a rate of 10%. If the required return is 15%, what is the current value of the shares using the Gordon growth model?
(A) $38.98.
(B) $22.00.
(C) $69.08.

39. Deployment Specialists pays a current (annual) dividend of $1.00 and is expected to grow at 20% for two years and then at 4% thereafter. If the required return for Deployment Specialists is

8.5%, the current value of Deployment Specialists is closest to:

(A) $25.39.

(B) $30.60.

(C) $33.28.

40. In computing the sustainable growth rate of a firm, the earnings retention rate is equal to:

(A) Dividends / required rate of return.

(B) 1 – (dividends / earnings).

(C) 1 – (dividends / assets).

41. In its most recent quarterly earnings report, Smith Brothers Garden Supplies said it planned to increase its dividend at an annual rate of 5% for the foreseeable future. Analyst Anton Spears is using a required return of 9.5% for Smith Brothers stock. Smith Brothers stock trades for $52.17 per share and earned $3.01 per share over the last 12 months. The company paid a dividend of $2.15 per share during the last 12-month period, and its dividend-growth rate for the last five years was 9.2%. Using the Gordon Growth model, the share price for Smith Brothers stock is most likely:

(A) undervalued.

(B) correctly valued.

(C) overvalued.

42. A firm has the following characteristics:

- Current share price $100.00.
- Current earnings $3.50.
- Current dividend $0.75.
- Growth rate 11%.
- Required return 13%.

Based on this information and the Gordon growth model, what is the firm's justified trailing price to earnings (P/E) ratio?

(A) 8.9.

(B) 11.3.

(C) 11.9.

43. An investor projects that a firm will pay a dividend of $1.00 next year and $1.20 the following year. At the end of the second year, the expected price of the shares is $22.00. If the required return is 14%, what is the current value of the firm's shares?

(A) $18.73.

(B) $15.65.

(C) $19.34.

44. The required rate of return for an asset is often difficult to determine, but if we know the growth prospects and the current earnings of a firm we can determine the implied required

rate of return from the:

(A) dividend rate.

(B) market price.

(C) earnings retention rate.

45. Which of the following is least likely a limitation of the two-stage dividend discount model (DDM)?

(A) most of the value is due to the terminal value.

(B) the length of the high-growth stage is difficult to measure.

(C) Terminal value estimate is most sensitive to estimates of future dividends.

46. Q-Partners is expected to have earnings in ten years of $12 per share, a dividend payout ratio of 50%, and a required return of 11%. At that time, ROE is expected to fall to 8% in perpetuity and the trailing P/E ratio is forecasted to be eight times earnings. The terminal value at the end of ten years using the P/E multiple approach and DDM is closest to:

	P/E multiple	DDM
(A)	96.32	85.14
(B)	96.32	85.71
(C)	96.00	89.14

47. If the growth rate in dividends is too high, it should be replaced with:

(A) the growth rate in earnings per share.

(B) the average growth rate of the industry.

(C) a growth rate closer to that of gross domestic product (GDP).

48. Applying the Gordon growth model to value a firm experiencing supernormal growth would result in:

(A) overstating the value of the firm.

(B) understating the value of the firm.

(C) a zero value.

49. Historical information used to determine the long-term average returns from equity markets may suffer from survivorship bias, resulting in:

(A) deflating the mean return.

(B) inflating the mean return.

(C) unpredictable results.

50. An investor projects that a firm will pay a dividend of $1.25 next year, $1.35 the second year, and $1.45 the third year. At the end of the third year, she expects the asset to be priced at $36.50. If the required return is 12%, what is the current value of the shares?

(A) $31.16.

(B) $29.21.

(C) $32.78.

51. A company reports January 1, 2002, retained earnings of $8,000,000, December 31, 2002, retained earnings of $10,000,000, and 2002 net income of $5,000,000. The company has 1,000,000 shares outstanding and dividends are expected to grow at a rate of 5% per year. What is the expected dividend at the end of 2003?

(A) $3.00.

(B) $3.15.

(C) $13.65.

52. The most appropriate model for analyzing a profitable high-tech firm is the:

(A) three-stage dividend discount model (DDM).

(B) zero growth cash flow model.

(C) H-model.

53. In which of the following stages is a firm most likely to distribute the highest proportion of earnings in the form of dividends?

(A) Transition stage.

(B) Mature stage.

(C) Initial growth stage.

54. Xerxes, Inc. forecasts earnings to be permanently fixed at $4.00 per share. Current market price is $35 and required return is 10%. Assuming the shares are properly priced, the present value of growth opportunities is closest to:

(A) +$5.00.

(B) +$3.50.

(C) -$5.00.

55. If the three-stage dividend discount model (DDM) results in extremely high value, the:

(A) growth rate in the stable growth period is probably too high.

(B) growth rate in the stable growth period is lower than that of gross national product (GNP).

(C) transition period is too short.

56. Demonstrate the use of the DuPont analysis of return on equity in conjunction with the sustainable growth rate expression.

The following statistics are selected from Kyle Star Partners (Kyle) financial statements:

Sales	$100 million
Net Income	$15 million

Dividends	$5 million
Total Assets	$150 million
Total Equity	$50 million

What is Kyle's sustainable growth rate?

(A) 24.5%.

(B) 33.3%.

(C) 20.0%.

57. If we know the forecast growth rates for a firm's dividends and the current dividends and current value, we can determine the:

(A) net margin of the firm.

(B) required rate of return.

(C) sustainable growth rate.

58. The three-stage dividend discount model (DDM) allows for an initial period of:

(A) high growth, a transitional period of stable growth and a final declining growth phase.

(B) high growth, a transitional period of declining growth and a final stable growth phase.

(C) stable growth, a transitional period of high growth and a final declining growth phase.

59. If a firm has a return on equity of 15%, a current dividend of $1.00, and a sustainable growth rate of 9%, what are the firm's current earnings?

(A) $1.50.

(B) $1.75.

(C) $2.50.

60. IAM, Inc. has a current stock price of $40.00 and expects to pay a dividend in one year of $1.80. The dividend is expected to grow at a constant rate of 6% annually. IAM has a beta of 0.95, the market is expected to return 11%, and the risk-free rate of interest is 4%. The expected stock price two years from today is closest to:

(A) $43.94.

(B) $41.03.

(C) $43.49.

61. Which of the following would NOT be appropriate to value a firm with two expected growth stages? A(an):

(A) Gordon growth model.

(B) H-model.

(C) free cash flow model.

62. An analyst has collected the following data on two companies:

	Middle Hickory Co.	Lower Elm Inc.
FCFE	Negative	Positive and growing
Capital investment	Significant	Decreasing

Which dividend-discount model is the best option for valuing the two companies?

	Middle Hickory	Lower Elm
(A)	Gordon Growth	Three-stage
(B)	Two-stage	Gordon Growth
(C)	Three-stage	Two-stage

63. Which of the following is least likely a valid approach to determining the appropriate discount rate for a firm's dividends?
(A) Free cash flow to firm (FCFF).
(B) Arbitrage pricing theory (APT).
(C) Capital asset pricing model (CAPM).

64. Supergro has current dividends of $1, current earnings of $3, and a return on equity of 16%, what is its sustainable growth rate?
(A) 8.9%.
(B) 12.2%.
(C) 10.7%.

65. A firm pays a current dividend of $1.00 which is expected to grow at a rate of 5% indefinitely. If current value of the firm's shares is $35.00, what is the required return applicable to the investment based on the Gordon dividend discount model (DDM)?
(A) 8.25%.
(B) 7.86%.
(C) 8.00%.

66. The debate over whether to use the arithmetic mean or geometric mean of market returns for the capital asset pricing model (CAPM):
(A) was settled by the work of Harry Markowitz in 1972.
(B) limits its usefulness in estimating the required return of an asset.
(C) has little practical effect because they are both very close.

A team of analysts at WSM investments are currently analyzing the equity value of Shotput Inc., which they believe may be a potential takeover target for some of its rivals. Three of the analysts, Jeff Capes, CFA, Sven Karlson, CFA, and Zydrunas Savickas, CFA, are using the dividend discount model to try to value the company.

Jeff Capes, CFA, decided to use the constant growth Dividend Discount Model (DDM) to estimate the equity value. He is using the following information from Shotput's financial statements for the year just ended:

Income Statement	$m
Revenues	850

COGS	580
SG & A	200
Depreciation expense	50
Earnings before tax	20
Taxes	10
Net income	10
Dividend	6

Balance Sheet	$m
Cash	10
Accounts receivable	450
Prepaid expenses	50
Fixed assets	400
Total assets	**910**
Current liabilities	550
Long-term debt	156
Equity	204
Total liabilities & equity	**910**

In order to calculate Return on Equity, Jeff calculates and uses the opening equity figure of $200m.

Capes has identified a company in the same industry, Discus Inc., which has the same size and risk characteristics as Shotput. He has decided to use the following information on Discus to estimate a required return for equity holders of Shotput:

Equity market value	$62.94m
Dividend just paid	$5.5m
Sustainable growth rate	3%

Capes is also interested in calculating the present value of growth opportunities (PVGO) for Shotput. He is proposing to use the last dividend paid by Shotput and divide it by the required rate of return to get the value of its assets in place, and compare this to the fundamental value to get PVGO.

Sven Karlson, CFA, is also estimating an equity value for Shotput using the DDM. He has estimated a required return for equity of 11% using the Capital Asset Pricing Model. He has also picked up the dividends just paid as $6m from the financial statements.

Karlson, however, is uncertain about how dividends will grow and feels that Shotput has a competitive advantage over its rivals in the short term, which will lead to increased dividend growth for the next few years. He has therefore assumed that for the first three years the dividend growth rate will be 7% p.a., and then will decline

linearly over the next six years to 2% p.a., a growth rate that will then be sustained for the foreseeable future.

Zydrunas Savickas, however, has questioned the use of the DDM for the purposes of their research. They are hoping to present their findings to one of Shotput's competitors who they feel may be in a position to launch a takeover bid and realize a gain from Shotput's current undervaluation.

Savickas states, "While I accept that a benefit of the dividend discount model is that the resulting valuation is not very sensitive to changes in the required rate of return assumption, as we are looking at a potential takeover, it may be more appropriate to consider a free cash flow model. The dividend discount model is most appropriate from the perspective of a minority shareholder."

67. Using Shotput's financial statements and Jeff Cape's estimates, calculate an equity value for Shotput using the constant growth DDM:
    (A) $60.0m.
    (B) $61.2m.
    (C) $66.7m.

68. Calculate an equity value using the assumptions made by Karlson (to the nearest $m):
    (A) $73m.
    (B) $79m.
    (C) $87m.

69. Is Savickas correct in his comments regarding the DDM?
    (A) He is correct about the minority perspective, but not the sensitivity to the required rate of return assumption.
    (B) He is correct about the minority perspective and the required rate of return assumption.
    (C) He is incorrect in both statements.

70. What adjustment to his calculation method does Capes need to make in to correctly calculate PVGO?
    (A) The value of assets in place is given by the previous dividend multiplied by one plus the sustainable growth rate divided by the required rate of return.
    (B) The value of assets in place is given by earnings divided by the required rate of return.
    (C) The value of assets in place is given by earnings divided by the required rate of return minus the sustainable growth rate.

71. Relative to traditional financial models like the dividend discount model, the biggest advantage of spreadsheet modeling is:
    (A) accuracy of computations.
    (B) quantity of computations.
    (C) simplicity of computations.

72. The Gordon growth model is most likely to produce useful results when the dividend growth rate is:
(A) negative.
(B) greater than the required rate of return.
(C) equal to the required rate of return.

73. An investor projects the price of a stock to be $16.00 in one year and expected the stock to pay a dividend at that time of $2.00. If the required rate of return on the shares is 11%, what is the current value of the shares?
(A) $15.28.
(B) $16.22.
(C) $14.11.

74. What is the value of a fixed-rate perpetual preferred share (par value $100) with a dividend rate of 7.0% and a required return of 9.0%?
(A) $56.
(B) $71.
(C) $78.

75. Jax, Inc., pays a current dividend of $0.52 and is projected to grow at 12%. If the required rate of return is 11%, what is the current value based on the Gordon growth model?
(A) unable to determine value using Gordon model.
(B) $39.47.
(C) $58.24.

76. JAD just paid a dividend of $0.80. Analysts expect dividends to grow at 25% in the next two years, 15% in years three and four, and 8% for year five and after. The market required rate of return is 10%, and Treasury bills are yielding 4%. JAD has a beta of 1.4. The estimated current price of JAD is closest to:
(A) $45.91.
(B) $29.34.
(C) $25.42.

Jakzach Corp. is a U.S.-based company. Exhibits 1-3 present the financial statements, which are prepared according to U.S. GAAP, and related information for the company. Exhibit 4 presents relevant industry and market data.

Exhibit 1

Jakzach Corp. Summary Balance Sheets on 31 December (U.S. $ millions)		
	20x6	20x5

Cash	$13.00	$5.87
Accounts receivable	30.00	27.00
Inventory	209.06	189.06
Current assets	$252.06	$221.93
Gross fixed assets	474.47	409.47
Accumulated depreciation	(154.17)	(90.00)
Net fixed assets	320.30	319.47
Total assets	**$572.36**	**$541.40**
Accounts payable	25.05	$26.05
Notes payable	0.00	0.00
Current portion of long-term debt	0.00	0.00
Current liabilities	$25.05	$26.05
Long-term debt	240.00	245.00
Total liabilities	$265.05	$271.05
Common stock	160.00	150.00
Retained earnings	147.31	120.35
Total shareholders' equity	$307.31	$270.35
Total liabilities and shareholders' equity	**$572.36**	**$541.40**

Exhibit 2

Jakzach Corp. Summary Income Statement for the Year Ended 31 December 20X6 (U.S. $ millions)	
Revenue	$300.80
Total operating expenses	(173.74)
Operating profit	127.06
Gain on sale	4.00
Earnings before interest, taxes, depreciation, and amortization (EDITDA)	131.06
Depreciation and amortization	(71.17)
Earnings before interest and taxes (EBIT)	59.89
Interest	(16.80)
Income tax expense	(12.93)
Net income	30.16

Exhibit 3

Jakzach Corp. Common Equity Data for 20x6	
Dividends paid (U.S. $ millions)	$3.20
Weighted average shares outstanding during 20x6	16,000,000
Dividend per share	$0.20

Earnings per share	$1.89
Beta	1.80

Note: The dividend payout ratio is expected to be constant.

Exhibit 4

Industry and Market Data 31 December 20x6	
Risk-free rate of return	4.00%
Expected rate of return on market index	9.00%
Median industry price/earnings (P/E) ratio	19.90
Expected industry earnings growth rate	12.00%

The portfolio manager of a large mutual fund comments to one of the fund's analysts, Katrina Preedy:

"We have been considering the purchase of Jakzach Corp. equity shares, so I would like you to analyze the value of the company. To begin based on Jakzach's past performance; you can assume that the company will grow at the same rate as the industry."

77. Calculate the value of a share of Jakzach equity on 31 December 20x6, using the Gordon growth dividend model and the capital asset pricing model.
    (A) $20.00.
    (B) $22.40.
    (C) $211.68.

78. Calculate the profit margin component of Jakzach's return on equity for the year 20x6.
    (A) 8.70%.
    (B) 10.03%.
    (C) 19.91%.

79. Calculate the asset turnover component of Jakzach's return on equity for the year 20x6. Note: Your calculations should use 20x6 beginning-of-year balance sheet values.
    (A) 0.53.
    (B) 0.56.
    (C) 0.94.

80. Calculate the sustainable growth rate of Jakzach on 31 December 20x6.
    Note: Your calculations should use 20x6 beginning-of-year balance sheet values.

(A) 1%.
(B) 9%.
(C) 10%.

81. The sustainable growth rate, g, equals:
(A) pretax margin divided by working capital.
(B) earnings retention rate times the return on equity.
(C) dividend payout rate times the return on assets.

82. Free cash flow to equity models (FCFE) are most appropriate when estimating the value of the firm:
(A) only for non-dividend paying firms.
(B) to creditors of the firm.
(C) to equity holders.

83. If an asset's beta is 0.8, the expected return on the equity market is 10%, the retention ratio is 0.7, the dividend growth rate is 5%, and the appropriate discount rate for the Gordon model is 9%, the risk-free rate must be closest to:
(A) 5.0%.
(B) 3.8%.
(C) 2.5%.

84. If an asset was fairly priced from an investor's point of view, the holding period return (HPR) would be:
(A) the same as the required return.
(B) lower than the required return.
(C) equal to the alpha returns.

85. Which of the following models would be most appropriate for a firm that is expected to grow at an initial rate of 10%, declining steadily to 6% over a period of five years, and to remain steady at 6% thereafter?
(A) The H-model.
(B) The Gordon growth model.
(C) A two-stage model.

86. What is the beta implied by a market price of $40.38?
(A) 1.02.
(B) 1.16.
(C) 1.20.

87. Based on CAPM and the Gordon growth model, what is the value of the UC stock if the firm's retention ratio is 0.7, its tax rate is 40%, and its beta is 1.12?
(A) $9.72.

(B) $20.79.
(C) $44.49.

88. Assuming a beta of 1.12, if UC is expected to have a growth rate of 10% for the first 3 years and 5% thereafter, what is the value of UC stock?
(A) $53.81.
(B) $46.89.
(C) $50.87.

89. Assuming a beta of 1.12, if UC's growth rate is 10% initially and is expected to decline steadily to a stable rate of 5% over the next three years, what is the price of UC stock?
(A) $47.67.
(B) $46.61.
(C) $47.82.

90. The discounted dividend approach that we have used to value UC Inc. is most appropriate for valuing dividend-paying stocks in which:
(A) dividends differ substantially from FCFE.
(B) the investor takes a minority ownership perspective.
(C) free cash flow is negative

91. UC Inc. had earnings of $3.00/share last year and a justified trailing P/E of 15.0. Is the stock currently overvalued, undervalued, or fairly valued if we consider a security trading within a band of ±10 percent of intrinsic value to be within a "fair value range"? At a market price of $40.38, UC Inc. is best described as:
(A) undervalued.
(B) overvalued.
(C) fairly valued.

92. A firm's dividend per share in the most recent year is $4 and is expected to grow at 6% per year forever. If its shareholders require a return of 14%, the value of the firm's stock (per share) using the single-stage dividend discount model (DDM) is:
(A) $28.57.
(B) $50.00.
(C) $53.00.

93. Which of the following models would be most appropriate for a firm that is expected to grow at 8% for the next three years, and at 6% thereafter?
(A) A two-stage model.
(B) The H-model.
(C) The Gordon growth model.

94. The current market price per share for Burton, Inc. is $33.33, and an analyst is using the Gordon Growth model to determine whether this is a fair price. The company paid a dividend of $2.00 last year on earnings of $2.50 a share. If the required rate of return is 12.00% and the expected grown rate in earnings and in dividends is 6%, the current market price is most likely:

(A) correctly valued.

(B) overvalued.

(C) undervalued.

95. Methods for estimating the terminal value in a DDM are least likely to include:

(A) PVGO.

(B) the market multiple approach.

(C) the Gordon Growth Model.

96. A $100 par, perpetual preferred share pays a fixed dividend of 5.0%. If the required rate of return is 6.5%, what is the current value of the shares?

(A) $88.64.

(B) $76.92.

(C) $100.00.

97. An analyst has compiled the following financial data for ABC, Inc.:

ABC, Inc. Valuation Scenarios				
Item	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Year 0 Dividends per Share	$1.50	$1.50	$1.50	$1.50
Long-term Treasury Bond Rate	4.0%	4.0%	5.0%	5.0%
Expected Return on the S&P 500	12.0%	12.0%	12.0%	12.0%
Beta	1.4	1.4	1.4	1.4
g (growth rate in dividends)	0.0%	3.0%	Year 1-3, g = 12.0% After Year 3, g = 3.0%	Year 1, g = 20% Year 2, g = 18% Year 3, g = 16% Year 4, g = 9% Year 5, g = 8% Year 6, g = 7% After Year 6, g = 4%

If year 0 dividend is $1.50 per share, the required rate of return of shareholders is 15.2%, what

is the value of ABC, Inc.'s stock price using the H-Model? Assume that the growth in dividends has been 20% for the last 8 years, but is expected to decline 3% per year for the next 5 years to a stable growth rate of 5%.

(A) $19.85.
(B) $24.26.
(C) $20.95.

98. Stan Bellton, CFA, is preparing a report on TWR, Inc. Bellton's supervisor has requested that Bellton include a justified trailing price-to-earnings (P/E) ratio based on the following information:
Current earnings per share (EPS) = $3.50.
Dividend Payout Ratio = 0.60.
Required return for TRW = 0.15.
Expected constant growth rate for dividends = 0.05
TWR's justified trailing P/E ratio is closest to:

(A) 6.3.
(B) 4.0.
(C) 6.0.

99. Sustainable growth is the rate that earnings can grow:

(A) without additional purchase of equipment.
(B) with the current assets.
(C) indefinitely without altering the firm's capital structure.

100. An analyst has forecast that Apex Company, which currently pays a dividend of $6.00, will continue to grow at 8% for the next two years and then at a rate of 5% thereafter. If the required return is 10%, based on a two-stage model what is the current value of Apex shares?

(A) $127.78.
(B) $126.24.
(C) $133.13.

Julie Davidson, CFA, has recently been hired by a well-respected hedge fund manager in New York as an investment analyst. Davidson's responsibilities in her new position include presenting investment recommendations to her supervisor, who is a principal in the firm. Davidson's previous position was as a junior analyst at a regional money management firm. In order to prepare for her new position, her supervisor has asked Davidson to spend the next week evaluating the fund's investment policy and current portfolio holdings. At the end of the week, she is to make at least one new investment recommendation based upon her evaluation of the fund's current portfolio. Upon examination of the fund's holdings, Davidson determines that the domestic growth stock sector is currently underrepresented in the portfolio. The fund has stated to its investors that it will aggressively pursue opportunities in this sector, but due to recent profit-taking, the portfolio needs some rebalancing to increase its exposure to this

sector. She decides to search for a suitable stock in the pharmaceuticals industry, which, she believes, may be able to provide an above average return for the hedge fund while maintaining the fund's stated risk tolerance parameters.

Davidson has narrowed her search down to two companies, and is comparing them to determine which is the more appropriate recommendation. One of the prospects is Samson Corporation, a mid-sized pharmaceuticals corporation that, through a series of acquisitions over the past five years, has captured a large segment of the flu vaccine market. Samson financed the acquisitions largely through the issuance of corporate debt. The company's stock had performed steadily for many years until the acquisitions, at which point both earnings and dividends accelerated rapidly. Davidson wants to determine what impact any additional acquisitions will have on Samson's future earnings potential and stock performance.

The other prospect is Wellborn Products, a manufacturer of a variety of over-the-counter pediatric products. Wellborn is a relatively new player in this segment of the market, but industry insiders have confidence in the proven track record of the company's upper management who came from another firm that is a major participant in the industry. The market cap of Wellborn is much smaller than Samson's, and the company differs from Samson because it has grown internally rather than through the acquisition of its competitors. Wellborn currently has no long-term debt outstanding. While the firm does not pay a dividend, it has recently declared that it intends to begin paying one at the end of the current calendar year.

Select financial information (year-end 2005) for Samson and Wellborn is outlined below:

Samson:

Current Price:	$36.00
Sales:	$75,000,000
Net Income:	$5,700,000
Assets:	$135,000,000
Liabilities:	$95,000,000
Equity:	$60,000,000

Wellborn:

Current Price:	$21.25
Dividends expected to be received at the end of 2006:	$1.25
Dividends expected to be received at the end of 2007:	$1.45
Price expected at year-end 2007:	$27.50
Required return on equity:	9.50%
Risk-free rate:	3.75%

Other financial information:

One-year forecasted dividend yield on market index:	1.75%
Consensus long-term earnings growth rate:	5.25%

Short-term government bill rate:	3.75%
Medium-term government note rate:	4.00%
Long-term government bond rate:	4.25%

It is the beginning of 2006, and Davidson wants use the above data to identify which will have the greatest expected returns. She must determine which valuation model(s) is most appropriate for these two securities. Also, Davidson must forecast sustainable growth rates for each of the companies to assess whether or not they would fit within the fund's investment parameters.

101. Using the Gordon growth model (GGM), what is the equity risk premium?
   (A) 2.75%.
   (B) 3.25%.
   (C) 5.50%.

102. Davidson needs to determine if the shares of Wellborn are currently undervalued or overvalued in the market relative to the shares' fundamental value. The estimated fair value of Wellborn shares, using a two-period dividend discount model (DDM), is:
   (A) $27.69.
   (B) $27.58.
   (C) $25.29.

103. Which of the following dividend discount models assumes a high growth rate with a linear decline to a lower stable growth rate?
   (A) Gordon growth model.
   (B) Three-stage dividend discount model.
   (C) H model.

104. What is the difference between a standard two-stage growth model and the H-model?
   (A) The H-model assumes that earnings will dip in the middle of each stage and return to the previous rate by the period's end.
   (B) In the standard two-stage model, a fixed rate of growth is assumed for each stage, while the H-model assumes a linearly declining rate of growth in one stage.
   (C) The H-model assumes a terminal value, while the standard two-stage model does not.

105. Supergro has current dividends of $1, current earnings of $3, and a sustainable growth rate of 10%. What is Supergro's return on equity?
   (A) 15%.
   (B) 20%.
   (C) 12%.

106. An investor buys shares of a firm at $10.00. A year later she receives a dividend of $0.96 and sells the shares at $9.00. What is her holding period return on this investment?
   (A) –0.8%
   (B) –0.4%
   (C) +1.2%

107. If a stock expects to pay dividends of $2.30 per share next year, what is the value of the stock if the required rate of return is 12% and the expected growth rate in dividends is 4%?
   (A) $19.17.
   (B) $29.90.
   (C) $28.75.

108. If an investor were attempting to capture an asset's alpha returns, the expected holding period return (HPR) would be:
   (A) higher than the required return.
   (B) the same as the required return.
   (C) lower than the required return.

109. If we increase the required rate of return used in a dividend discount model, the estimate of value produced by the model will:
   (A) remain the same.
   (B) increase.
   (C) decrease.

110. Analyst Kelvin Strong is arguing with fellow analyst Martha Hatchett. Strong insists that the dividend discount model can be used to calculate the required return for a stock, though only if the growth rate remains constant. Hatchett maintains that while such models are useful for calculating the value of a stock, they should not be used to calculate required returns. Who is CORRECT?

	Strong	Hatchett
(A)	Correct	Incorrect
(B)	Incorrect	Correct
(C)	Incorrect	Incorrect

111. Recent surveys of analysts report long-term earnings growth estimates as 5.5% and a forecasted dividend yield of 2.0% on the market index. At the time of the survey, the 20-year U.S. government bond yielded 4.8%. According to the Gordon growth model, what is the equity risk premium?

(A) 0.4%.
(B) 7.5%.
(C) 2.7%.

112. Most firms follow a pattern of growth that includes several stages. The second stage is most likely to be referred to as the:
(A) maturity stage.
(B) decline stage.
(C) transitional stage.

113. Multi-stage dividend discount models can be used to estimate the value of shares:
(A) under an almost infinite variety of scenarios.
(B) only under a limited number of scenarios.
(C) only when the growth rate exceeds the required rate of return.

114. A firm has the following characteristics:
- Current share price $100.00.
- Next year's earnings $3.50.
- Next year's dividend $0.75.
- Growth rate 11%.
- Required return 13%.

Based on this information and the Gordon growth model, what is the firm's justified leading price to earnings (P/E) ratio?
(A) 10.7.
(B) 11.3.
(C) 8.7.

115. Which of the following is NOT a component of the sustainable growth rate formula using the DuPont model?
(A) Net income/sales.
(B) EBIT/interest expense.
(C) Earnings retention ratio.

116. Analyst Louise Dorgan has put together a short fact sheet on two companies, Benson Orchards and Terra Firma Development.

	Benson Orchards	Terra Firma Development
Price/earnings ratio	18.5	
Most recent dividend	$0.56 per share	$1.67 per share

Estimated stock return	15%	
Estimated market return		13%
Beta	1.2	1.7
Trailing profits	$ 5.16 per share	
Stock-market value	$123 million	$1.678 billion
Shares outstanding		875 million

The risk-free rate is 3.6%, and Dorgan estimates the stock market's equity risk premium as 7.5%.

Using only the data presented above, can Dorgan create a Gordon Growth model for:

	Benson Orchards	Terra Firm Development
(A)	No	No
(B)	Yes	No
(C)	Yes	Yes

117. In the five-part DuPont model ROE = (NUEBT)(EBT/EBIT)(EBIT/sales)(sales/assets)(assets/equity), the product of the first three terms is:

(A) gross profit margin.

(B) operating profit margin.

(C) net profit margin.

118. Which of the following dividend discount models (DDMs) is most appropriate for modeling a mature company?

(A) H-model.

(B) Gordon growth model.

(C) Two-stage DDM.

119. A firm has the following characteristics:

- Current share price $100.00.
- One-year earnings $3.50
- One-year dividend $0.75.
- Required return 13%.
- Justified leading price to earnings 10.

Based on the dividend discount model, what is the firm's assumed growth rate?

(A) 10.9%.

(B) 12.4%.

(C) 8.6%.

120 GreenGrow, Inc., has current dividends of $2.00, current earnings of $4.00 and a return on equity of 16%. What is GreenGrow's sustainable growth rate?

(A) 9%.

(B) 6%.

(C) 8%.

121. An analyst has compiled the following financial data for ABC, Inc.

ABC, Inc. Valuation Scenarios				
Item	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
Year 0 Dividends per Share	$1.50	$1.50	$1.50	$1.50
Long-term Treasury Bond Rate	4.0%	4.0%	5.0%	5.0%
Expected Return on the S&P 500	12.0%	12.0%	12.0%	12.0%
Beta	1.4	1.4	1.4	1.4
g (growth rate in dividends)	0.0%	3.0%	Year 1-3, g = 12.0% After Year 3, g = 3.0%	Year 1, g = 20% Year 2, g = 18% Year 3, g = 16% Year 4, g = 9% Year 5, g = 8% Year 6, g = 7% After Year 6, g = 4%

What is the value of ABC, Inc.'s stock price using the assumptions contained in Scenario 4?

(A) $18.52.

(B) $22.22.

(C) $26.66.

122. In its most recent quarterly earnings report, Smith Brothers Garden Supplies said it planned to increase its dividend at an annual rate of 13% for the foreseeable future. Analyst Clinton Spears has an annual return target of 15.5% for Smith Brothers stock. He decides to use the dividend-growth rate to back out another return estimate to test against his. Smith Brothers stock trades for $55 per share and earned $3.01 per share over the last 12 months. The company paid a dividend of $2.15 per share during the 12-month period, and its dividend-growth rate for the last five years was 9.2%.

Using the Gordon Growth model, the required annual return for Smith Brothers stock is closest to:

(A) 19.18%.

(B) 17.42%.

(C) 13.47%.

123. The H-model is more flexible than the two-stage dividend discount model (DDM) because:
   (A) payout ratio changes to adjust the changes in growth estimates.
   (B) initial high growth rate declines linearly to the level of stable growth rate.
   (C) terminal value is not sensitive to the estimates of growth rates.

124. The volatility of equity returns requires us to use data from long time periods to compute mean returns. One problem that this causes is that:
   (A) inflation alters the value of the past returns.
   (B) the past is rarely an indication of the future.
   (C) equity premiums vary over time with perceived risk.

125. James Malone, CFA, covers GNTX stock, which is currently trading at $45.00 and just paid a dividend of $1.40. Malone expects the dividend growth rate to decline linearly over the next six years from 25% in the short run to 6% in the long run. Malone estimates the required return on GNTX to be 13%. Using the H-model, the value of GNTX is closest to:
   (A) $32.60.
   (B) $17.55.
   (C) $33.40.

126. Which of the following groups of statistics provides enough data to calculate an implied return for a stock using the two-stage DDM?
   (A) Yield, stock price, historical dividend-growth rate, historical profit-growth rate.
   (B) Short-term growth rate, long-term growth rate, stock price, trailing 12-month profits.
   (C) P/E ratio, trailing 12-month profits, short-term PEG ratio, long-term PEG ratio, yield.

127. As a part of her analysis, Davidson needs to calculate return on equity for both potential investments. What is last year's return on equity (ROE) for Samson shares?
   (A) 6.5%.
   (B) 3.5%.
   (C) 9.5%.

128. Davidson determines that over the past three years, Samson has maintained an average net profit margin of 8 percent, a total asset turnover of 1.6, and a leverage ratio (equity multiplier) of 1.39. Assuming Samson continues to distribute 35 percent of its earnings as dividends, Samson's estimated sustainable growth rate (SGR) is:
   (A) 6.2%
   (B) 17.8%.
   (C) 11.6%.

129. Multi-stage growth models can become computationally intensive. For this reason they are often referred to as:
   (A) quadratic models.

(B) spreadsheet models.

(C) R-squared models.

130. If the risk-free rate is 6%, the equity premium of the chosen index is 4%, and the asset's beta is 0.8, what is the discount rate to be used in applying the dividend discount model?

(A) 9.20%

(B) 7.80%

(C) 10.80%

131. One of the limitations of the dividend discount models (DDMs) is that they:

(A) are very sensitive to growth and required return assumptions.

(B) are conceptually difficult.

(C) can only be used for companies that are experiencing stable growth