

CFA LEVEL I – FIRST PRACTICE EXAMINATION ANSWERS

Topic: Ethical and Professional Standards

1. **D** Bill is not allowed to use the bolded CFA mark, so he has violated the code of standards.
2. **D** Members must adhere to the highest requirement imposed by applicable law **or** Code and Standards.
3. **C** Ignorance is no excuse. Under Standard I.A. “Knowledge of the Law,” members must maintain a reasonable knowledge of all laws and regulations.
4. **C** There is no obligation for one member to report another’s violations to regulators. Moreover, there is no obligation for any member to take a matter concerning violations “into one’s own hands”, but under the code of ethics, Jane must encourage Jon to stop violating the regulation. “C” is the best response of the choices provided.
5. **B** Jane remains a candidate until she receives her results for Level 1. However, after receiving the results, she must register for Level 2, **and** her registration must be accepted by CFA Institute for her to continue to be considered as a “candidate.”
6. **B** Factual information published by a recognized financial source does not require proper citation since it is already in the public domain. Otherwise, references to specific analyses should acknowledge the author by name.
7. **A** No violation has occurred. Jon is entitled to prepare for an independent practice so long as his activities do not conflict with his current employer.
8. **B** The prospective client list is property of his current employer. Use of this list without written permission is a violation of Standard IV.A. “Duty to Employer: Loyalty”.
9. **D** Although “Standard IV.B: Duties to Employers: Additional Compensation Arrangements” requires Jane to get permission from both the employer and client. However, in this case no conflict of interest would likely arise with the employers’ general interest, so this standard likely does not apply. However, under Standard “Standard V.I Disclosure of Conflicts” Jane should disclose the gift to her employer because it may conflict between clients. Would Jane now spend more time managing this client’s assets than other clients?
10. **C** As Compliance Officer, Bill has a responsibility to act promptly. Failure to do so could be considered a violation of Standard IV.C. “Responsibilities of Supervisors”.
11. **A** Compliance Officers should act promptly, but they should also ensure a fair and thorough investigation of the matter.
12. **D** Although it is not clear how Mike relayed the information concerning the stock to his clients, option “D” is nevertheless the best response. As a CFA Charterholder, he had a responsibility to analyze the basic characteristics of the investment, recommend the stock in a portfolio context, and maintain proper records.
13. **D** A Rey is likely in violation of Standard V.A “Diligence and Reasonable Basis” because he has not

investigated the objectivity of the purchased research. Rey is allowed to make investment recommendations using third party research as long as he regularly assures that the research is sound and objective. He must regularly validate the objectivity of purchased research if it is used to make investment recommendations for clients.

Topic: Quantitative Methods

14. A
LOS: 7-d

$$[(1.12)(1.05)(0.97)(1.08)]^{1/3.5} = [1.23198]^{0.28571} = 1.0614$$

$$(1.0614 - 1) \times 100\% = 6.14\%$$

On the calculators:

BaII Plus:

$\boxed{2\text{nd}} \boxed{\text{CLR TVM}}$

$\boxed{1.23198} \boxed{\text{FV}}$

$\boxed{1} \boxed{+/-} \boxed{\text{PV}}$

$\boxed{3.5} \boxed{\text{N}}$

$\boxed{\text{CPT}} \boxed{\text{I/Y}} \Rightarrow 6.16$

HP12C:

$\boxed{\text{f}} \boxed{\text{CLEAR REG}}$

$\boxed{1.23198} \boxed{\text{FV}}$

$\boxed{1} \boxed{\text{CHS}} \boxed{\text{PV}}$

$\boxed{3.5} \boxed{\text{n}}$

$\boxed{\text{i}} = 6.14$

15. C
LOS: 5-d

$$\begin{aligned} \text{PV} &= \$20/1.1 + \$24/(1.1)^2 - \$15/(1.1)^3 + \$225/(1.1)^4 \\ &= \$20/1.1 + \$24/1.21 - \$15/1.331 + \$225/1.464 \\ &= \$18.18 + \$19.83 - \$11.27 + \$153.69 \\ &= \$180.43 \end{aligned}$$

On the calculators:

BaII Plus:

CF

$\boxed{2\text{nd}} \boxed{\text{CLR WORK}}$

$\boxed{0} \boxed{\text{ENTER}} \boxed{\downarrow}$

$\boxed{20} \boxed{\text{ENTER}} \boxed{\downarrow} \boxed{\downarrow}$

$\boxed{24} \boxed{\text{ENTER}} \boxed{\downarrow} \boxed{\downarrow}$

$\boxed{15} \boxed{+/-} \boxed{\text{ENTER}} \boxed{\downarrow} \boxed{\downarrow}$

HP12C:

$\boxed{\text{f}} \boxed{\text{REG}}$

$\boxed{0} \boxed{\text{g}} \boxed{\text{CF}_0}$

$\boxed{20} \boxed{\text{g}} \boxed{\text{CF}_i}$

$\boxed{24} \boxed{\text{g}} \boxed{\text{CF}_i}$

$\boxed{15} \boxed{\text{CHS}} \boxed{\text{g}} \boxed{\text{CF}_i}$

$\boxed{225} \boxed{\text{g}} \boxed{\text{CF}_i}$

225 ENTER ↓ ↓

10 i

NPV

f NPV => 180.43

10 ENTER ↓

CPT => 180.43

16. A
LOS: 5-d

$$\begin{aligned} FV &= \$20 \times (1.1)^3 + \$24 \times (1.1)^2 - \$15 \times (1.1)^1 + \$225 \times (1.1)^0 \\ &= \$20 \times 1.331 + \$24 \times 1.21 - \$15 \times 1.1 + \$225 \times 1 \\ &= \$26.62 + \$29.04 - \$16.50 + \$225 \\ &= \$264.16 \end{aligned}$$

On the calculators:

BAII Plus:

2nd CLR TVM

0 STO 0

10 I/Y

20 +/- PV

3 N

CPT FV => 26.12

STO + 0

24 +/- PV

2 N

CPT FV => 29.04

STO + 0

15 PV

1 N

HP12C:

f REG

0 STO 0

10 i

20 CHS PV

3 n

FV => 26.12

STO + 0

24 CHS PV

2 n

FV => 29.04

STO + 0

15 PV

1 n

CPT **FV** => -16.50

FV => -16.50

STO **+** **0**

STO **+** **0**

225 **STO** **+** **0**

225 **STO** **+** **0**

RCL **0** => 264.16

RCL **0** => 264.16

17. B
LOS: 5-d

Here's what is going on:

EOY	0	1	2	3	4	5
Flow	0	0	0	1000	1000	1000

$$\begin{aligned}
 PV &= 1000 / (1.08)^3 + 1000 / (1.08)^4 + 1000 / (1.08)^5 \\
 &= 1000 / 1.2597 + 1000 / 1.3605 + 1000 / 1.4693 \\
 &= 793.84 + 735.02 + 680.60 \\
 &= 2,209.46
 \end{aligned}$$

On the Calculators:

If we solve this problem using the annuity feature of our calculators with the END annuity payment mode, which is the default, we will be valuing the annuity at the end of year 2. Therefore, the Present Value of this annuity must be discounted for two years, not three years.

BAII Plus:

HP12C:

2nd **CLR TVM**

f **REG**

1000 **PMT**

1000 **PMT**

8 **I/Y**

8 **i**

3 **N**

3 **n**

CPT **PV** => -2577.10

PV => -2577.10

2nd **CLR TVM**

f **REG**

FV

2577.10 **FV**

8 I/Y

8 i

2 N

2 n

CPT PV => 2209

PV => -2209

This problem could also be solved using the uneven cash flow capability of the calculators, as in the answer to Question 17.

18. B

LOS: 5-d and 6-a

$$PV = \frac{60/2}{(1.025)^1} + \frac{60/2}{(1.025)^2} + \frac{60/2}{(1.025)^3} + \frac{60/2}{(1.025)^4} + \frac{60/2}{(1.025)^5} + \frac{(1000 + 60/2)}{(1.025)^6} = 1027.54$$

On the calculators, using the cash flow features:

BAII Plus:

HP12C:

CF 2nd CLR WORK

f REG

0 ENTER ↓

0 g CF₀

30 ENTER ↓

30 g CF_i

5 ENTER ↓

5 g N_i

1030 ENTER ↓

1030 g CF_i

NPV

2.5 i

2.5 ENTER ↓

f NPV => 1027.54

CPT => 1027.54

Using the time value features:

2nd CLR TVM

f REG

30 PMT

30 PMT

6 N

6 n

1000 FV

1000 FV

2.5 I/Y

2.5 i

CPT **PV** => -1027.54

PV => -1027.54

Note that both calculators have more complex bond functions—to deal with partial coupon payments, accrued coupon, etc.—but either approach shown above should be sufficient for the CFA examination.

19. B

LOS: 5-d and 6-a

The answer is **i** in the following equation:

$$1050 = \frac{60/2}{(1+i/2)^1} + \frac{60/2}{(1+i/2)^2} + \frac{60/2}{(1+i/2)^3} + \frac{60/2}{(1+i/2)^4} + \frac{60/2}{(1+i/2)^5} + \frac{(1000+60/2)}{(1+i/2)^6}$$

Good luck on working this one without a calculator! On the calculators, using the cash flow features:

BAlI Plus:

CF **2nd** **CLR WORK**

1050 **+/-** **ENTER** **↓**

30 **ENTER** **↓**

5 **ENTER** **↓**

1030 **ENTER** **↓**

IRR **CPT** **X** **2** **=** => 4.21

HP12C:

f **REG**

1050 **CHS** **g** **CF₀**

30 **g** **CF_i**

5 **g** **N_i**

1030 **g** **CF_i**

f **IRR** **2** **X** => 4.21

Using the time value features:

2nd **CLR TVM**

1050 **+/-** **PV**

30 **PMT**

6 **N**

1000 **FV**

CPT **I/Y** **X** **2** **=** => 4.21

f **REG**

1050 **CHS** **PV**

30 **PMT**

6 **n**

1000 **FV**

i **2** **X** => 4.21

20. B

LOS: 5-e

This problem is more tricky than it may first appear because the first investment will be made today and because of the zero flow at the end of the 10th year.

Here's what's going on:

EOY	0	1	2	3	4	5	6	7	8	9	10	11	12	etc.
Flow	?	?	?	?	?	?	?	?	?	?	0	50	50	etc.

While many approaches will work, a reasonable approach is to (1) find the present value of the conventional annuity (annuity in arrears) of \$50,000 per year for 30 years as of the end of year 10, and then (2) solve for the payment necessary in an **annuity due** to generate this present value at the end of year 10.

BAlI Plus:

```

2nd CLR TVM
50000 PMT
6 I/Y
30 N
CPT PV => -688242
2nd BGN 2nd SET 2nd QUIT
2nd CLR TVM
688242 FV
10 I/Y
10 N
CPT PMT => -39258
    
```

HP12C:

```

f REG
50000 PMT
6 i
30 n
PV => -688242
g BEG
f REG
688242 FV
10 i
10 n
PMT => -39258
    
```

The step on the 7th line sets the calculators to reflect the flow of funds at the beginning of each period. Don't forget to reset your calculator to END; on the BAlI Plus, repeat the steps on line 7; on the HP12C, repeat the step on line 7 with END substituted for BEG.

21. B
LOS: 9-g

The expected return (12%) plus or minus one standard deviation (14%) = $-2% < R < 26%$. Under assumption of normality this will occur about 2/3 or about 68% of the time.

22. C
LOS: 8-e

If the industry tanking is event A and the stock tanking is event B, then by the multiplication rule:

$$P(AB) = P(B | A) \cdot P(A) = (0.70) \cdot (0.40) = 0.28 .$$

23. D
LOS: 11-a, d

This is a two-tailed test; the alternative hypothesis has the form:

$$H_1: \mu \neq h\%, \text{ not } H_1: \mu \geq h \text{ or } H_1: \mu \leq h.$$

In terms of the test, the good news is that according to the central limit theorem you can use the z statistic (normal distribution) because $n = 36$ is “large”.

A z value of 2.4 has somewhat less than a 0.05 probability of occurring by chance (recall that the precise z associated with a 0.05 probability is 1.96), so the null hypothesis is rejected and the alternative hypothesis is accepted.

Topic: Economic Analysis

24. B
LOS: 14-b

25. B
Preliminary readings, LOS: 13-a, 14-c

A change in price changes quantity supplied, not supply.

26. B
LOS: 13-a

$$\% \text{ Chg } Q / \% \text{ Chg } P = 10/50 = 0.2$$

27. A
LOS: 19-b

All profit maximizing firms will produce where $MR = MC$.

28. B
LOS: 18-b

29. D
LOS: 16-a

Because economic costs are greater than accounting costs, economic profits are smaller than accounting profits.

30. B
LOS: 16-d

31. B
LOS: 23-d

32. A
LOS: 23-d

Topic: Financial Statement Analysis

Calculations for 33 through 38:

SELLING CORPORATION
 STATEMENT OF CASH FLOWS
 YEAR 2

Cash Flow from Operations:		
Net Income		\$ 20,000
Add: Depreciation		26,000
Decrease in Mdse. Inventory		23,000
Increase in Inc. Taxes Payable		1,000
Less: Increase in Accts. Receivable		(17,000)
Decrease in Accts. Payable		<u>(27,000)</u>
Net Cash Flow from Operations		<u>\$ 26,000</u>
Cash Flow from Financing:		
Issuance of Common Stock		\$ 13,000
Payment of Dividends		(5,000)
Retirement of Bonds		<u>(20,000)</u>
Net Cash Flow from Financing		<u>\$(12,000)</u>
Cash Flow from Investing:		
Sale of Building		\$ 10,000
Purchase of Equipment		(19,000)
Purchase of Land		<u>(3,000)</u>
Net Cash Flow from Investing		<u>\$(12,000)</u>
Increase in Cash during Year 2		<u><u>\$ 2,000</u></u>

33. B
LOS: 34 f, h

See Statement of Cash Flows above.

34. D
LOS: 34 f, h

See Statement of Cash Flows above.

35. D
LOS: 34 f, h

See Statement of Cash Flows above.

36. B
LOS: 34 f, h

Sales + Δ Accounts Receivable = \$540,000 - \$17,000 = \$523,000.

37. C
LOS: 34 f, h

-Tax Expense + Δ Taxes Payable = -\$9,000 + \$1,000 = -\$8,000

38. D
LOS: 32 k

Prior period adjustments are usually corrections of errors that are reported in the statement of retained earnings. All of the other nonrecurring items listed are reported in the income statement below income from continuing operations.

39. C
LOS: 32 h

Income for the calculation would be \$780,000 (net income of \$800,000 minus the cumulative preferred stock dividends of \$20,000). The bonds are convertible into common stock but are ignored in calculating basic EPS whether anti-dilutive or not. The capital structure is complex because New York Manufacturing has convertible bonds and preferred stock. The weighted-average number of shares outstanding:

400,000 shares for three months	x	12/12 =	400,000 shares
100,000 shares for three months	x	9/12 =	75,000
- 50,000 shares for six months	x	6/12 =	<u>-25,000</u>
			450,000 shares

40. B
LOS: 32 h

Basic EPS = $780,000/450,000 = \$1.73$ as given above. Any convertible that increases EPS is anti-dilutive.

Convertible Preferred = $+\$20,000/100,000$ shares = \$.50. This will decrease basic EPS

Convertible Bonds = $(\$90,000 \times .70)/30,000$ shares = $\$63,000/30,000 = \2.10 . This will increase basic EPS and is anti-dilutive.

41. C
LOS: 32 h

Diluted EPS = $\$2,200,000 / 1,000,000 + (100,000 - 42,857)$ shares = \$2.08 per share

42. D
LOS: 35 a-e

43. C
LOS: 35 b

Using LIFO, the more recent, higher prices paid for inventory become Cost of Goods Sold; higher Cost of Goods Sold results in lower Net Income and lower Income Tax Expense.

44. C
LOS: 37 c

Average age = $\$8 \text{ million} / \$1 \text{ million} = 8$ years

45. C
LOS: 37 a

$(34/55) \times (\$550,000 - \$82,500) = \$289,000$

46. A
LOS: 38 e
“Tax exempt income” would be reported in a company’s income statement but would never be included in the tax return.

47. A
LOS: 38 g

$\$1,200 / .40 = \$3,000$ is net total timing difference.
 $\$3,000 \times .3 = \900 is new net deferred tax liability. Net deferred tax liability is reduced by \$300 which reduces tax expense.

48. D
LOS: 39 b

PV of \$300,000, interest yield of 9% semi-annual, payments of \$12,000, with 18 semi-annual payment remaining is \$281,760.
Interest expense is \$12,679 or $\$281,760 \times .045\%$.

49. B
LOS: 40 b

The expenses related to a capital lease are Interest Expense and Amortization Expense; Rent Expense would be recognized only with an operating lease.

50. D
LOS: 40 a, b

Topic: Corporate Finance

51. C
LOS: 45-h

In order to use the CAPM model, you must first derive the nominal risk-free rate. $NRFR = [(1 + RFR)(1+E)] - 1 = [(1.05)(1.02)] - 1 = 1.071$. Now apply to the CAPM model, where $k_e = k_{RF} + \beta(k_{Mkt} - k_{RF})$. Note that the required return of the market is not given, but the equity premium is provided. Thus, $k_e = .071 + 1.25 (.06) = .146$.

52. C
LOS: 44-d

Depreciation = $\$200,000 / 5 = \$40,000$ per year
After-Tax Operating Cash Flows for Years 1 - 5
= $\$80,000 \times (1-.38) + \$40,000 \times .38$
= $\$49,600 + \$15,200 = \$64,800$

Initial Investment = installed cost + increase in working capital
= $(\$200,000) + (19,000) = (219,000)$
Year 5 Benefit = release of net working capital + after-tax salvage value
= $\$19,000 + \$30,000 \times (1-.38) = \$37,600$

$NPV = -\$219,000 + \$64,800/(1.10)^1 + \$64,800/(1.10)^2$
 $+ \$64,800/(1.10)^3 + \$64,800/(1.10)^4 + [\$64,800 + \$37,600]/(1.10)^5$
= $\$49,989.62$ or $\$49,990$ rounded

Note, this is a challenging question.

53. D
LOS: 45-a

$WACC = R_E \times (E/V) + R_D \times (1 - T_C) \times (D/V) = .18 \times .55 + .09 \times (1 - .34) \times .45 = 12.573\%$.

54. A
LOS: 45-h

This question requires you to apply the “bond yield + risk premium” approach to estimating the cost of retained earnings.

Topic: Equity Investments

55. B
LOS: 60-e

$$\begin{aligned}
\text{Sustainable growth rate} &= (\text{retention rate}) \times (\text{ROE}) \\
&= (1 - \text{payout ratio}) \times (\text{ROE}) \\
&= (1 - .4) \times (.2) = .6 \times .2 = .12
\end{aligned}$$

56. C

LOS: 60-b

There are four steps to the solution of this problem:

First, find the present value of the dividends in years 1 - 3:

$$\begin{aligned}
&\$2.00 (1.20)^1 / (1.15)^1 + \$2.00 (1.20)^2 / (1.15)^2 + \$2.00 (1.20)^3 / (1.15)^3 \\
&\$2.09 + \$2.18 + \$2.27 = \mathbf{\$6.54}
\end{aligned}$$

Second, find the price at the end of year 3, (P_3), based on the dividends that begin in year 4 and continue indefinitely:

$$P_3 = \$2.00 (1.20)^3 * 1.07 / (0.15 - 0.07) = \$3.70 / 0.08 = \mathbf{\$46.25}$$

Third, find the present value of P_3 :

$$PV(P_3) = \$46.25 / (1.15)^3 = \mathbf{\$30.41}$$

Fourth, sum the answers in steps one and three. **Do not include the answer from step two.**

$$\text{Intrinsic value} = \$6.54 + \$30.41 = \mathbf{\$36.95}$$

57. B

LOS: 53-a

The three commonly employed weighting schemes are price-weighted, value-weighted and unweighted.

58. D

LOS: 60-b

The appropriate or intrinsic value of a stock is the discounted value of all expected future dividends. Market value can temporarily deviate from intrinsic value. Earnings are the source of dividends.

59. C

LOS: 60-b

$$P_0 = D_1 / (k - g) = [D_0 \times (1 + g)] / (k - g) = [\$5 \times (1.10)] / (.15 - .10) = \$5.50 / .05 = \$110$$

Topic: Derivative Investments

60. B

LOS: 72-b, c, and d

The margin account balance must be brought back up to the level of the initial margin requirement whenever a margin call is made.

61. B

LOS: 70-d, 73-a, b and k

The terms “European” and “American” do not refer to where the options trade. Both European and American options are traded on U.S. exchanges. If option markets in the U.S. were more

liquid than elsewhere, this fact could not be used to infer the relative trading activity of European and American options. Call prices drop and put prices rise as the exercise price declines. Interest rate increases have a positive effect on calls and a negative effect on puts.

62. B
LOS: 73-a and e

The call is expiring in-the-money by \$5. At expiration, the option has no time value.

63. C
LOS: 74-a and b

The terms of an interest rate swap are customized to whatever the two parties desire. Currency swaps require an initial exchange of principal.

64. C
LOS: 74-b

The dollar payment made by the company will be $\$10,000,000(0.09875) = \$987,500$. The Swiss Franc payment received by the company will be $\text{SFR}14,286,000(0.1037) = \text{SFR}1,481,458$. The payments will not be netted, but we can compute the company's net cash flow in dollars as follows: Convert the SFR receipt to dollars as $\text{SFR}1,481,458(\$0.70/\text{SFR}) = \$1,037,021$. The net cash flow to the company is $\$1,037,021 - \$987,500 = \$49,521$.

Topic: Fixed Income Investments

65. B
LOS: 62-b

The Macaulay duration (not the modified duration) of a zero-coupon bond equals its term to maturity.

66. A
LOS: 63-f

Duration increases with lower coupons and lower yields.

67. C
LOS: 65-i

Solving for the tax rate in the FTEY formula, we find that investors should prefer the 9.75% corporate bond at a tax rate of 36% or less; i.e., $6.2 / (1 - .36) = 9.68\%$. Thus, go with the corporate bond at 31 and 36% tax brackets (II and IV), and with the municipal at higher tax rates (IV).

68. A
LOS: 69-c

In periods of falling rates, better returns can be earned by bonds that are more price sensitive (more

convexity) and less likely to be held back by call (noncallable bonds).

69. B
LOS: 62-b

A nonrefundable bond may be called for any reason but refunding; so, yes, they can be called.

70. D
LOS: 69-g
 $\% \text{ change} = (180) \times (.095 - .075)^2 \times 100 = 7.2 \%$

71. D
LOS: 62-e

The cap of a floater can be thought of as an option requiring no action by the issuer to take advantage of a rise in interest rates.

72. A
LOS: 69 d, g

$$\begin{aligned} \text{Modified D} &= 8.0/1.065 = 7.51 \\ \% \text{ change} &= [-7.51 \times .0075 \times 100] + [(220) \times (.0075)^2 \times 100] \\ &= -5.6325 + 1.2375 = -4.395 \% \end{aligned}$$

73. B
LOS: 69-g

Positive convexity means bond prices go up faster than they go down.

74. C
LOS: 63 f, n, 69 d, g

75. A
LOS: 69-b

The standard duration measure would apply so long as the bond continues to trade well below par and the call feature has virtually no impact on the price behavior of the issue.

76. A
LOS: 63-a

Lower bond ratings generally do translate into higher required yields.

Note: II is wrong since speculative-grade (junk) bonds normally carry ratings of double-B or less, and IV is wrong since the tool is a **rating transition matrix**.

77. B
LOS: 62-d and 63-d

Freely callable bonds involves higher (call or prepayment) risk to the investor, therefore they provide higher yields than noncallable bonds.

78. A
LOS: 68-b

Yield to call: $\$1172.92 = (\$100/2 \times PVIFA_{Y, 10}) + (\$1050 \times PVIF_{Y, 10}) = 6.73\%$.

Topic: Portfolio Management

79. B
LOS: 51-c

One of the important conclusions of the CAPM is that investors are rewarded only for assuming systematic, or nondiversifiable, risk. Therefore, this statement is not true.

80. A
LOS: 51-a

81. B
LOS: 51-a

Portfolios A and C are at the extreme ends of the efficient frontier, and each one may be preferred by some investors. Of the remaining two portfolios, Portfolio D is clearly superior to Portfolio B because it has both a higher expected return and a lower risk.

82. D
LOS: 51-e

Tanner's beta is 0.6 since it is 40% **less** volatile than the market, and the market has a beta of 1.0.
 $k = 7 + .6 (15 - 7) = 11.8\%$

83. B
LOS: 51-d

84. D
LOS: 51-b

All risky assets are in the market portfolio.

85. D
LOS: 51-a

The standard deviation of the risk-free portfolio is 0%; therefore, 60% of 24% = 14.4%.

86. B
LOS: 49 a-d

The investment policy statement includes the objectives, and the constraints and preferences. It does not include judgments or opinions about how the process should be organized, recognizing only that the process itself is common to all managers.

87. D
LOS: 51-e

As noted, both portfolios are completely diversified. This means **that the return on these portfolios should be related only to the systematic risk of the portfolios as given by their betas**—therefore, the standard deviations are irrelevant. You should calculate the required return for each portfolio using the CAPM, and compare the result to the expected return for that portfolio.

Doe Portfolio is undervalued, since its required return, as given by the CAPM, is

$$k = 6 + 0.9 (16 - 6) = 15\%$$

and this portfolio has an expected return of 16% .

The Doe Portfolio offers more return than would be required, given its level of risk, and therefore would be attractive to investors.

The Deer Portfolio, on the other hand, has a required return of

$$k = 6 + 1.0 (16 - 6) = 16.0\%$$

and an expected return of only 15%. Therefore, it is overvalued.

If expected return - required return is positive, the portfolio is undervalued; $ER > RR$;

if expected return - required return is negative, the portfolio is overvalued; $RR > ER$

Topic: Alternative Investments

88. C
LOS 76-c

Sector risk only affects ETFs that invest in particular market sectors. A single sector is exposed to unique economic, political or regulatory events that may adversely affect the performance of stocks in that sector. But other ETFs invest in the broad market that consists of all sectors. Derivatives risk affects only ETFs that use derivatives; not all do. But tracking error risk affects all ETFs, as they all try to match the returns of some underlying index. Tracking error risk arises from trading risk, and also the risk that ETF NAV's may differ from their true values.

89. B
LOS 76-f

$$NOI - 400,000 - (0.05 \times 400,000) - 50,000 = \$330,000$$

NOI ignores depreciation expense and ignores interest expense. Both of these will affect after-tax net income (see example 79-4 on pp. 393-395 of Reading 79), but they do not affect NOI.

90. B
LOS 76-h

The probability that the project survives to the end of the third year = $(0.70) \times (0.76) \times (0.80) = 42.56\%$

The NPV if the project survives = $-\$3 \text{ million} + \$10 \text{ million}/1.12^3 = \$4,117,800$

The NPV if the project fails = $-\$3 \text{ million}$

The expected NPV = $(0.4256 \times \$4,117,800) + (0.5744 \times -\$3 \text{ million}) = \$29,336$