Checkpoint Exam 1 (Readings 1-38)

Question 1

Lurry Corporation executives are considering the purchase of a factory that produces after-market parts for classic cars. The purchase price is $38 million. They have estimated the after-tax cash flows from operating the factory to be $3 million at the end of Year 1, $4 million at the end of Years 2 and 3, and $5 million at the end of Years 4 and 5. After five years, they expect to be able to sell the factory for $40 million. Based on the company's 9.5% estimate of its weighted average cost of capital, the net present value (NPV) for the factory is:

A) $0.98 million.

B) **$3.18 million.** ✓

C) $4.12 million.

Explanation

The cash flows (in millions) are –38 at Year 0, 3 at Year 1, 4 at Years 2 and 3, 5 at Year 4, and 45 at Year 5. The NPV of the factory purchase, using a 9.5% discount rate, is $3.1855 million.

(Module 24.1, LOS 24.b)

Related Material
SchweserNotes - Book 1

Question 2

An investor borrows $3,000 at a 2.0% interest rate to supplement $7,000 of his own equity. If the unleveraged portfolio loss is –3.0%, the leveraged return is *closest* to:

A) –5.14%. ✓

B) –2.40%.

C) 3.43%.

Explanation

Leverage magnifies gains and losses, and so the leveraged return must be a larger loss than 3%. This leaves the only possible correct choice as –5.14%, without performing any calculations.

Leveraged return = $[r_p(V_D + V_E) -$

where r_P = –3.0%, V_D = $3,000, V_E = $7,000, and r_D = 2.0%.

$$\text{Leveraged return} = \frac{-3.0\%\,\$3,000 + \$7,000 - 2.0\%\,\$3,000}{\$7,000} = \frac{(-\$300 - \$60)}{\$7,000} = -5.14\%$$

The 3.43% answer option incorrectly treats the 3% return as a gain, instead of a loss, and –2.40% incorrectly adds instead of subtracts the interest cost—and incorrectly uses the total investment, not the investor's cash investment, in the denominator.

(Module 1.2, LOS 1.b)

Related Material

SchweserNotes - Book 1

Question 3

A US investor buys shares in a Swiss company, at a price of CHF 5 per share. The exchange rate at the time of purchase was 1.2800 USD per CHF. After six months, the company pays a dividend of 0.17 CHF per share, and the investor sells its shares for CHF 5.25 each, when the exchange rate is 1.3105 USD per CHF. The return to the investor in USD is *closest* to:

A) 8.40%.

B) **10.98%.** ✓

C) 14.06%.

Explanation

The original cost of one share in USD = 5 × 1.2800 = USD 6.40.

The final value of the share plus the dividend in USD = (5.25 + 0.17) × 1.3105 = USD 7.1029.

Domestic return to the US investor = $\frac{7.1029 - 6.40}{6.40}$ = 10.98%.

The 8.40% answer option is incorrect because this is the return in CHF, not USD: (5.25 + 0.17 – 5) / 5 = 8.40%. The 14.06% answer option is incorrect because it uses the correct USD figures in the numerator, but the CHF cost in the denominator.

(Module 2.1, LOS 2.a)

Related Material
SchweserNotes - Book 1

Question 4

Using a money-weighted return to evaluate an investment manager's performance is appropriate if the manager:

A) controls the cash flows into and out of the portfolio. ✓

B) holds investments denominated in multiple currencies.

C) actively trades with an average holding period less than one year.

Explanation

If a manager controls the cash flows into and out of the portfolio, a money-weighted return is appropriate for evaluating the manager's performance. Otherwise, a time-weighted return is more appropriate. Neither the manager's trading strategy nor the types of assets held in the portfolio are relevant when selecting which metric to use to analyze manager performance.

(Module 3.1, LOS 3.a)

Related Material
SchweserNotes - Book 1

Question 5

The constituent stocks in a price-weighted index initially sum to $400 with a divisor of 4.0 before one of the constituent stocks executes a 4-for-1 stock split. If this stock was trading at $80 at the time of the stock split, the index divisor after the stock split is *closest* to:

A) 3.4. ✓

B) 3.6.

C) 4.0.

Explanation

The original index value was $400 / 4.0 = 100.0. The $80 stock splits into four shares, so its new price will be $20, or $60 less than the pre-split share. The new sum of the component prices is, therefore, $400 – $60 = $340. To maintain an index value of 100.0, the new divisor must become $340 / 100.0 = 3.4.

(Module 3.2, LOS 3.b)

Related Material
SchweserNotes - Book 1

Question 6

The cash flows of a 3-year, 6% coupon, annual-pay bond with a face value of $1,000 can be replicated with the cash flows of a 3-year annuity that pays $60 per year and a zero-coupon bond that pays:

A) $1,000 in the third year. ✓

B) $1,060 in the third year.

C) $1,000 in the fourth year.

Explanation

The bond's cash flows are $60 in Year 1, $60 in Year 2, and $1,060 in Year 3. A 3-year annuity that pays $60 per year would replicate all these cash flows except for the $1,000 face value repaid in Year 3, which can be replicated with a zero-coupon bond that pays $1,000 in Year 3.

(Module 4.1, LOS 4.a); (Module 4.2, LOS 4.c)

Related Material
SchweserNotes - Book 1

Question 7

Returns data for Limbo Company exhibit the following statistics:

Mean	9.5%
Median	14.3%
Excess Kurtosis	–0.97

The returns distribution for Limbo Company is:

A) positively skewed.

B) **negatively skewed.** ✓

C) not skewed.

Explanation

Since the median is higher than the mean, the distribution is negatively skewed. If the mean were higher than the median the distribution would be positively skewed. If the distribution was not skewed, the mean would equal the median.

(Module 5.2, LOS 5.b)

Related Material
SchweserNotes - Book 1

Question 8

Three portfolios have the following expected returns and standard deviations of returns:

	Expected return	Standard deviation
Portfolio X	8%	12%
Portfolio Y	4%	5%
Portfolio Z	6%	8%

An investor who evaluates these portfolios based on their coefficient of variation should prefer:

A) Portfolio X.

B) **Portfolio Y.** ✓

C) Portfolio Z.

Explanation

Because the coefficient of variation measures risk per unit of return, a lower value is better. The CVs for these portfolios are as follows:

- Portfolio X: $\frac{12}{8}$ = 1.50
- Portfolio Y: $\frac{5}{4}$ = 1.25
- Portfolio Z: $\frac{8}{6}$ = 1.33

Portfolio Y has the lowest risk per unit of expected return.

(Module 5.3, LOS 5.d)

Related Material
SchweserNotes - Book 1

Question 9

A positive unconditional covariance between the returns of two securities implies that:

A) the securities always have identical returns.

B) an increase in the price of one security causes the other to increase.

C) **the securities' prices tend to move in the same direction relative to their means.** ✓

Explanation

Covariance measures the strength and direction of the linear relationship between two random variables. A positive covariance means they tend to move in the same direction, but it does not tell us about cause and effect.

(Module 6.1, LOS 6.a)

Related Material
SchweserNotes - Book 1

Question 10

Which of the following discrete distributions can have negative skewness?

A) Poisson.

B) Uniform.

C) **Binomial.** ✓

Explanation

Skewness for a binomial distribution is given by $\frac{1 - 2p}{\sqrt{np1 - p}}$, where n is the number of trials and p is the probability of success in a trial. If the probability of success is greater than 0.5, this will result in negative skewness.

A discrete uniform distribution has zero skewness. A Poisson distribution has positive skewness, given by $\frac{1}{\sqrt{\lambda}}$, where λ is a constant rate at which an event is assumed to occur.

(Module 6.2, LOS 6.b)

Related Material

SchweserNotes - Book 1