

- 16) You are given the following information about Stock X and the market:
- (i) The annual effective risk-free rate is 5%.
  - (ii) The expected return and volatility for Stock X and the market are shown in the table below:
- |         | <u>Expected Return</u> | <u>Volatility</u> |
|---------|------------------------|-------------------|
| Stock X | 5%                     | 40%               |
| Market  | 8%                     | 25%               |
- (iii) The correlation between the returns of stock X and the market is -0.25.

Assume the Capital Asset Pricing Model holds. Calculate the required return for Stock X and determine if the investor should invest in Stock X.

- (A) The required return is 1.8%, and the investor should invest in Stock X.
- (B) The required return is 3.8%, and the investor should NOT invest in stock X.
- (C) The required return is 3.8%, and the investor should invest in stock X.
- (D) The required return is 6.2%, and the investor should NOT invest in Stock X.
- (E) The required return is 6.2%, and the investor should invest in stock X.

14) You are given the following information about Stock X, Stock Y, and the market:

- (i) The annual effective risk-free rate is 4%.
- (ii) The expected return and volatility for Stock X, Stock Y, and the market are shown in the table below:

	<u>Expected Return</u>	<u>Volatility</u>
Stock X	5.5%	40%
Stock Y	4.5%	35%
Market	6.0%	25%

- (iii) The correlation between the returns of stock X and the market is -0.25.
- (iv) The correlation between the returns of stock Y and the market is 0.30.

Assume the Capital Asset Pricing Model holds. Calculate the required returns for Stock X and Stock Y, and determine which of the two stocks an investor should choose.

- (A) The required return for Stock X is 3.20%, the required return for Stock Y is 4.84%, and the investor should choose Stock X.
- (B) The required return for Stock X is 3.20%, the required return for Stock Y is 4.84%, and the investor should choose Stock Y.
- (C) The required return for Stock X is 4.80%, the required return for Stock Y is 4.84%, and the investor should choose Stock X.
- (D) The required return for Stock X is 6.40%, the required return for Stock Y is 3.16%, and the investor should choose Stock Y.
- (E) The required return for Stock X is 3.50%, the required return for Stock Y is 3.16%, and the investor should choose both Stock X and Stock Y.

15) You are given the following information about Stock X, Stock Y, and the market:

- (i) The expected return and volatility for Stock X, Stock Y, and the market are shown in the table below:

	<u>Required Return</u>	<u>Volatility</u>
Stock X	3.0%	50%
Stock Y	?	35%
Market	6.0%	25%

- (ii) The correlation between the returns of stock X and the market is  $-0.25$ .
- (iii) The correlation between the returns of stock Y and the market is  $0.30$ .

Assume the Capital Asset Pricing Model holds. Calculate the required return for Stock Y.

- (A) 1.48%
- (B) 2.52%
- (C) 3.16%
- (D) 4.84%
- (E) 6.52%

- 7) Consider a portfolio of four stocks as displayed in the following table:

Stock	Weight	Beta
1	0.1	1.3
2	0.2	-0.6
3	0.3	$\beta_3$
4	0.4	1.1

Assume the expected return of the portfolio is 0.12, the annual effective risk-free rate is 0.05, and the market risk premium is 0.08.

Assuming the Capital Asset Pricing Model holds, calculate  $\beta_3$ .

- A) 0.80
- B) 1.06
- C) 1.42
- D) 1.83
- E) 2.17