Answer: Question 2.3 – Grandeur Industries

1. The Capital Asset Pricing Model (CAPM) when used in an investment analysis context postulates that the return on an investment should be at least equal to the Risk-Free Rate plus a Risk Premium. The Risk Premium is based on the risk (volatility) of the investment relative to the overall market (as measured by Beta) times the incremental return on the market above the risk-free rate. The model can be expressed as follows;

$$Required\ Return = r_f + (r_m - r_f) \times \beta$$

Where: r_f = the Risk-Free rate
r_m = return on the market
β= the Beta value for the investment, a measure of risk

For the various projects:
Project A: Required Return = 4% + (14% - 4%) x 1.4 = 18%
Since the Internal Rate of Return (IRR) of 16% is less than the required 18%, the project should be REJECTED.

Project B: Required Return = 4% + (14% - 4%) x 1.6 = 20%
Since the Internal IRR of 18% is less than the required 20%, it should be REJECTED.

Project C: Required Return = 4% + (14% - 4%) x 0.7 = 11%
Since the IRR of 12%, is greater than the required 11%, it should be ACCEPTED.

Project D: Required Return = 4% + (14% - 4%) x 1.1 = 15%
Since the IRR of 17%, is greater than the required 15%, it should be ACCEPTED.

The capital asset pricing model allows firms (users) to assess the size of risk premium necessary to compensate for bearing risk. It is a way to estimate the required rate of return on a security or investment. Once the required return has been determined is lets the user know of the expected return from the investment is sufficient to warrant acceptance of the investment.

2. Grandeur should accept project C and D since the both the IRRs of the projects are greater than their required rate of return.

3. Beta = Measure of a stock's volatility in relation to market.
Market beta = 1
A stock that moves > market, beta > 1; if < market, < 1.
High beta stocks are riskier but potential for higher returns and vice versa.

4. Factors that have an influence on the Beta value for a project include:
   - The industry that the Division undertaking the project is in and its risk characteristics.
   - Experience the division has with similar projects, if any.