CAPM as pricing formula

If you sell a stock at q and buy at p.

rate of return $= \frac{q-p}{p}$,

$\therefore$ From CAPM $\Rightarrow$

$$\frac{q-p}{p} = r_f + \beta(r_M - r_f)$$

$$\therefore \quad p = \frac{q}{1 + r_f + \beta(r_m - r_f)}$$

If we have two assets with price p_1 and p_2 and end price as $\rightarrow (q_1)$ and (q_2)

$$p_1 = \frac{q_1}{1 + r_f + \beta_1(r_m - r_f)} \qquad p_2 = \frac{q_2}{1 + r_f + \beta_2(r_m - r_f)}$$

$p_1 + p_2 = ??$

Application

X is planning to invest in mutual fund which has (90 - 10) % composition.

- Market portfolio (return = 15%)
- fixed income (7% return)

One share of mutual fund = 100 INR