1. Ferguson purchased 18 shares of Manchester Ltd., for ₹ 1510 per share on 1/1/2008, during the time span of 2.5 years. Manchester Ltd., paid following dividends per share 2008 - ₹ 120, 2009 - ₹ 170, 2010 - ₹ 230. Ferguson sold the shares on 30-6-2010 for ₹ 2750 per share, find out the holding period returns earned by Ferguson [Ans: 116.56%]
   HPR = ((120+170+230)+(2750-1510))/1510*100) = 116.56%

2. Calculate expected returns from the following information for GEC Ltd.

Month	Returns
April	0.085
May	-0.15
June	-0.295
July	0.1675
August	-0.1575
September	-0.1975
October	-0.1475
November	0.67
December	0.445
January	0.4775
February	-0.1775
March	-0.1375

[Ans: 4.85%]

Arithmetic mean = 0.5825/12 = 0.0485*100 = 4.85%

3. Investor's assessment of return on a share of X Ltd. under three different situations is as follows:

Economic situation	Chance (P)	Return (%)
1	0.20	30
2	0.60	20
3	0.20	30

Calculate the expected rate of return, variance and standard deviation. [Ans: E(R)=20% σ = 6.32%]

4. The current price of stock 'M' is ₹ 210. The future prices with probabilities are given below:

Future Prices (₹)	178.50	199.50	252	283.50	315
Probability	0.15	0.25	0.30	0.2	0.1

Assuming that the company will not pay any dividend you are required to find out expected returns and standard deviation of the stock. [Return = 14.50% σ =21.09%]

Current Price	**210**						
Future Prices	178.5	199.5	252	283.5	315		
Return (r)	**-15**	**-5**	**20**	**35**	**50**		
Probability (P)	0.15	0.25	0.3	0.2	0.1		
pR	-2.25	-1.25	6	7	5	**14.5**	**Exp Ret**
R-Er	-29.5	-19.5	5.5	20.5	35.5		
(R-Er)^2	870.25	380.25	30.25	420.25	1260.25		
p*(R-Er)^2	130.5375	95.0625	9.075	84.05	126.025	**444.75**	**Variance**
						21.0891	**SD**

5. The stock of Box Limited performs well relative to the other stocks during recessionary periods. The stock of Cox Limited, on the other hand, does well during growth periods. Both the stocks are currently selling for Rs. 100 per share. You assess the rupee return (dividend plus price) of these stocks for the next year as follows:

Economic condition	Probability	Return on Box's stock	Return on Cox's stock
High growth	0.3	100	150
Low growth	0.4	110	130
Stagnation	0.2	120	90
Recession	0.1	140	60

Calculate the expected return and standard deviation of investing:

(a) Rs. 1000 in the equity stock of Box Limited [Ans: E(R)=1120 and SD = 116.6]

(b) Rs. 1000 in the equity stock of Cox Limited [Ans: E(R)=1210 and SD = 291.4]

(c) Rs. 500 each in the equity stock of Box Limited and Cox Limited.[Ans: E(R) = 1165 and SD = 89.6]

Box ' s stock							
Economic situation	**Chance (P)**	**Return (%)**	**Overall Return**	**pR**	**Overall R-Er**	**(R-Er)^2**	**p*(R-Er)^2**
High Growth	0.3	100	1000	300	-120	14400	4320
Low Growth	0.4	110	1100	440	-20	400	160
Stagnation	0.2	120	1200	240	80	6400	1280
Recession	0.1	140	1400	140	280	78400	7840
			Er =	1120		**Var =**	13600

Expected (Er)	**1120**
Variance (Var)	**13600**
STD Dev (SD)	**116.62**

Cox's stock							
Economic situation	**Chance (P)**	**Return (%)**	**Overall Return**	**pR**	**Overall R-Er**	**(R-Er)^2**	**p*(R-Er)^2**
High Growth	0.3	150	1500	450	290	84100	25230
Low Growth	0.4	130	1300	520	90	8100	3240
Stagnation	0.2	90	900	180	-310	96100	19220
Recession	0.1	60	600	60	-610	372100	37210
			Er =	1210		**Var =**	84900

Expected (Er)	**1210**
Variance (Var)	**84900**
STD Dev (SD)	**291.38**

If 500 in Box & 500 in Cox stock invested

Economic situation	Chance (P)	Overall Return	pR	Overall R-Er	(R-Er)^2	p*(R-Er)^2
High Growth	0.3	1250	375	85	7225	2167.5
Low Growth	0.4	1200	480	35	1225	490
Stagnation	0.2	1050	210	-115	13225	2645
Recession	0.1	1000	100	-165	27225	2722.5
		Er =	1165		**Var =**	8025

Expected (Er) =	**1165**
Variance (Var) =	**8025**
STD Dev (SD) =	**89.58**