Pb 1 - P. 29.

$P_t = 34\$$

$P_{t+1} = 39\$$

$D_{t+1} = 1.5\$$.

1/ $\boxed{HPR = \frac{\text{Ending } V}{\text{Beguig } V}}$

$$HPR = \frac{39\$ + 1.5\$}{34\$}$$

$$= \frac{40.5\$}{34\$} = 1.1911$$

1

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HPR > 0, because Ending Value > Beging Value

HPR > 1 ⇒ HPY > 0.

HPY = HPR − 1

= 1.1911 − 1

$\boxed{HPY = 19.11\%}$

!! in %

Pb 2, p.29:

$P_t = 65\$$, $P_{t+1} = 61\$$,

$D_{t+1} = 3\$/share$.

Price decrease for 65$ to 61$

$$HPR = \frac{E.V}{B.V} = \frac{61\$ + 3\$}{65\$}$$

$$= \frac{64\$}{65\$} < 1$$

$$= 0.9846 < 1.$$

$$\Rightarrow HPY = HPR - 1$$

$$= 0.9846 - 1$$

$$= -1.548\%$$

HPY < 0 because HPR < 1

Pb 6, p. 30 :

We have a Prob. distrib. for MADISON Stock Return.

R	Pb.	$R_M \times P_b$
-10%	0.3	-3%
0%	0.10	0%
10%	0.3	3%
25%	0.3	7.5%
	$\sum_{i=1}^{4} p_i = 1$	$\sum$

$$\boxed{E(R_M) = \sum_{i=1}^{4} p_i R_M}$$ N.A :

$E(R_M) = -3\% + 0\% + 3\% + 7.5\% = 7.5\%$ $\boxed{E(R_M) = 7.5\%}$

Pb 7, p. 30-31, Text book

$$\boxed{E(R_c) = \sum_{i=1}^{6} p_i R_{i}}$$

A.N :

$$E(R_c) = (-0.6 \times 0.05) + (-0.3 \times 0.2) + (-0.1 \times 0.1) + (0.2 \times 0.3) + (0.4 \times 0.2) + (0.8 \times 0.15) =$$

$$E(R_c) = \underline{\hspace{3cm}}$$

Pb 5, p.30:

we have historical Returns for the past 5 years: for 2 Stocks T and B.

$$E(R_T) = \frac{\sum_{t=1}^{5} R_T}{5} =$$

$$\frac{[19\% + 8\% + (-12\%) + (-3\%) + 15\%]}{5}$$

$$= \frac{27\%}{5} = 5.4\%$$

$$E(R_B) = [8\% + 3\% + (-9\%) + 2\% + 4\%]/5 =$$

$$\boxed{\frac{8\%}{5} = 1.6\%}$$

- 6 -

$E(R_T) = 5.4\%$.

$E(R_B) = 1.6\%$.

$\Rightarrow E(R_T) > E(R_B) \Rightarrow$ We Select Stock T having the highest Expected Return.

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b) <u>S.D computation:</u>

$$\sigma^2 = \sum_{i=1}^{5} \left(R - E(R)\right)^2 / 5$$

$$\sigma = \sqrt{\text{variance}} = \sqrt{\sigma^2}$$

For Stock T:

$$\boxed{\sigma^2 = \sum \left(R_T - E(R_T)\right)^2 / 5}$$

N.A.: $E(R_T) = 5.4\%$ a)

$$\sigma_T^2 =$$

$$\left[(19\% - 5.4\%)^2 + (8\% - 5.4\%)^2 + (-12\% - 5.4\%)^2 + (-3\% - 5.4\%)^2 + (15\% - 5.4\%)^2\right] / 5 =$$

$$\boxed{\sigma_T = \sqrt{\sigma_T^2}}$$

For Stock B:

$$\boxed{\sigma_B^2 = \sum_{i=1}^{5} \left(R_B - E(R_B)\right)^2 / 5} \quad \underline{N.A}$$

$$E(R_B) = 1.6\% \quad a)$$

$$\sigma_B^2 = \Big[(8\% - 1.6\%)^2 + (3\% - 1.6\%)^2 + (-9\% - 1.6\%)^2 + (2\% - 1.6\%)^2 + (4\% - 1.6\%)^2\Big] / 5$$

$$\boxed{\sigma_B = \sqrt{\sigma_B^2}}$$

c) $E(R_T) = 5.4\%$, $\sigma_T = .$

$\neq$

$E(R_B) = 1.6\%$, $\sigma_B = .$

To select The Best Stock, we cannot apply The Principle of Dominance because the 2 Stocks have $\neq$ Expected Return and $\neq$ levels of Risk

$\Rightarrow$ We use the Coefficient of Variation

E(R)	5.4%
σ(R)	.
CV	.

d) We should give the HPR for each stock.

~~HPR = HPY + 1~~

$HPY = HPR - 1$

$\Rightarrow \boxed{HPR = HPY + 1}$

$$\boxed{GM = \left[\prod_{i=1}^{5} HPR\right]^{\frac{1}{5}} - 1}$$

For Stock T:

$$GM_T = \left[(1.19)(1.08)(0.88)(0.97) \times (1.15)\right]^{\frac{1}{5}} - 1 =$$

$n = 5$

For Stock B:

$$GM_B = \left[\prod_{i=1}^{5} \left(HPR_B\right)\right]^{\frac{1}{5}} - 1$$

n = 5

N.A.:

$$GM_B = \left[(1.08)(1.03)(0.91)(1.02)(1.04)\right]^{\frac{1}{5}} - 1.$$

The 2 Stocks T and B

$$\left\{ \begin{array}{l} \text{have} \neq \text{Returns} \\ \text{HPY are} \neq \\ \text{HPRs are} \neq \end{array} \right.$$

$$\begin{cases} GM_T \neq AM_T \\ GM_B \neq AM_B \end{cases}$$

Subsequently, the AM will higher than the GM.

$\Rightarrow$ AM $\longrightarrow$ Short-term invest.

$\Rightarrow$ GM $\longrightarrow$ Long-term invest

<u>n = 5 years</u> $\Longrightarrow$ It is better to use the GM, because of Long-run invest.