Problem Set #4  Solutions

1. Consider a no-load mutual fund with $200 million in assets and 10 million shares at the start of the year, and $250 million in assets and 11 million shares at the end of the year. During the year investors have received income distributions of $2 per share, and capital gains distributions of $0.25 per share. Assuming that the fund carries no debt, and that the total expense ratio is 1%, what is the rate of return on the fund?

A. 36.25%
B. 24.90%
C. 23.85%
D. There is not sufficient information to answer this question
E. 23.75%

\[
NAV_0 = \frac{200}{10} = 20 \\
NAV_1 = \frac{250 - 250(0.01)}{11} = 22.5 \\
Return = \frac{NAV_1 - NAV_0 + IncomeDistributions + CapGainsDistributions}{NAV_0} \\
= \frac{22.5 - 20 + 2 + 0.25}{20} = 23.75
\]

2. Investors who wish to liquidate their holdings in a closed-end fund may _________________.

A. sell their shares back to the fund at a discount if they wish
B. sell their shares back to the fund at net asset value
C. sell their shares on the open market
D. sell their shares at a premium to net asset value if they wish

3. Assume that you have just purchased some shares in an investment company reporting $500 million in assets, $50 million in liabilities, and 50 million shares outstanding. What is the Net Asset Value (NAV) of these shares?

A. $12.00
B. $9.00
C. $10.00
D. $1.00

\[
NAV = \frac{500 - 50}{50} = 9
\]
4. A contingent deferred sales charge is commonly called a ____.
   A. front-end load
   B. back-end load
   C. 12b-1 charge
   D. top end sales commission

5. Consider a no-load mutual fund with $400 million in assets, 50 million in debt, and 15 million shares at the start of the year; and $500 million in assets, 40 million in debt, and 18 million shares at the end of the year. During the year investors have received income distributions of $0.50 per share, and capital gains distributions of $0.30 per share. Assuming that the fund carries no debt, and that the total expense ratio is 0.75%, what is the rate of return on the fund?
   A. 12.09%
   B. 12.99%
   C. 8.25%
   D. There is not sufficient information to answer this question

\[
NAV_0 = \frac{400 - 50}{15} = 23.33
\]
\[
NAV_1 = \frac{500 - 500(0.0075) - 40}{18} = 25.35
\]
\[
Return = \frac{NAV_1 - NAV_0 + IncomeDistributions + CapGainsDistributions}{NAV_0}
\]
\[
= \frac{25.35 - 23.33 + 0.50 + 0.30}{23.33} = 12.09
\]

6. The Wildwood Fund sells Class A shares with a front-end load of 5% and Class B Shares with a 12b-1 fees of 1% annually. If you plan to sell the fund after 4 years, are Class A or Class B shares the better choice? Assume a 10% annual return net of expenses.
   A. Class A
   B. Class B
   C. There is no difference.
   D. There is insufficient information given.

Assume $100 is invested.

Class A

Investment after front-end load = 100 - 100(0.05) = 95
After 4 years: 95(1.1)^4 = 139.09

Class B

Rate of return after 12-b1 fee = 10%-1% = 9%
After 4 years: 100(1.09)^4 = 141.16

Class B is better
7. Net Asset Value is defined as ________________________.
   
   A. book value of assets divided by shares outstanding  
   B. book value of assets minus liabilities divided by shares outstanding  
   C. market value of assets divided by shares outstanding  
   D. market value of assets minus liabilities divided by shares outstanding

8. Mutual funds provide the following for their shareholders:
   
   A. Diversification  
   B. Professional management  
   C. Record keeping and administration  
   D. Mutual funds provide diversification, professional management, and record keeping and administration