Problem Set #4 Solutions

- 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%

$$\begin{aligned} NAV_0 &= \frac{200}{10} = 20 \\ NAV_1 &= \frac{250 - 250(0.01)}{11} = 22.5 \\ \text{Re} \, turn &= \frac{NAV_1 - NAV_0 + IncomeDistributions + CapGainsDistributions}{NAV_0} \\ &= \frac{22.5 - 20 + 2 + 0.25}{20} = 23.75 \end{aligned}$$

- 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
 - R sell their shares back to the fund at net asset value sell their shares on the open market
 D. sell their shares at a premium to net asset value if they wish
- 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
 - 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
 - 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