Math 1030 #9b
Savings Plans and Investments
Total and Annual Return
Total Return -- the relative change in the investment value over a period of time.

\[
total \ return = \frac{\text{new value} - \text{starting principal}}{\text{starting principal}} = \frac{A - P}{P}
\]

Annual Return -- the average annual rate at which your money grew over a period of time.

\[
\text{annual return} = \left( \frac{A}{P} \right)^{1/Y} - 1
\]

EX 1: Three years after buying 20 shares of XYZ stock for $25 per share, you sell the stock for $8500. Find the total and annual return on this investment.
Types of Investments

1) Stocks - gives you a share of ownership in a company. The only way to get money from a stock is to sell.

2) Bonds - a promise of future cash. The issuer pays simple interest and promises to pay the principal by some later date.

3) Cash - money deposited in bank accounts, CDs and U.S. Treasury Bills

Things to consider when investing

1) Liquidity - How easy is it to get to your money?

2) Risk - Is the principal invested at risk?

3) Return - How much return (total or annual) do you expect to earn?
EX 2: Which investment in 1900 would have been worth more at the end of 2008?

a) $10 in stocks
b) $75 in bonds
c) $500 in cash

<table>
<thead>
<tr>
<th>Category</th>
<th>1900-2008 Average Annual Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocks</td>
<td>6.0%</td>
</tr>
<tr>
<td>Bonds</td>
<td>2.1%</td>
</tr>
<tr>
<td>Cash</td>
<td>1.0%</td>
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</tbody>
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