

The table below will help you organize the information in the Interest and Annuities sections. The Description column should give insight as to when to use what formula.

| <b>Investment Type</b>   | <b>Description</b>  | <b>Formula</b> | <b>Definitions of Variables</b> | <b>Completed Example from Homework</b> |
|--|---|----------------|---------------------------------|--|
| <b>Simple Interest</b>   | You deposit an initial amount of money into an account. You earn $r\%$ of this initial amount each period (usually one year).   |                |                                 |  |
| <b>Amount simple interest investment is worth after <math>t</math> years</b> | The amount you earn in interest plus the amount you initially invested.   |                |                                 |  |
| <b>Compound Interest</b>   | Instead of just earning interest on the initial investment, the interest you earn is added to the principal periodically, the subsequent interest is then calculated using this amount. |                |                                 |  |

|                                   |  |  |  |  |
|-----------------------------------|--|--|--|--|
| <b>Effective rate of interest</b> | <p>The <u>simple</u> interest rate that would produce the same amount of money in one year of investment using the compound rate.</p>  |  |  |  |
| <b>Increasing annuity</b>         | <p>You put money into the account periodically and the amount in the account accumulates. This is typical to do for retirement plans.</p> <p>The key here is that money is not only earned in interest but you are actually depositing money periodically.</p> |  |  |  |
| <b>Decreasing annuity</b>         | <p>You have an amount of money in an account. You withdraw a certain amount each period until there is no money in the account.</p> <p>The key here is that interest is earned as you are withdrawing money.</p>   |  |  |  |

