**9.2 Understanding Interest – Overview**

**Definitions / Key Ideas**

(*n* values)

**Interest** –Amount charged for borrowing money or earned from investing

**Table

Description automatically generated**

**Principal** –Initial investment or loan amount.

**Annual Percentage Rate (APR)** – Yearly interest rate (normally given as percentage per year).

**Simple Interest** – Only calculated on the principal.

**Compound Interest** –Calculated on principal and accrued interest.

**Continuously Compounded Interest** –Interest is compounded continuously.

**Annual Percentage Yield** **(APY)** – Effective annual interest rate (accounts for compounding).

**Formulas and Examples How much money will I have if… And how much interest will I earn if…**

1. Simple Interest **Ex**: I invest $500 at 10% APR with simple interest for 8 years? For 6 months?

2. Compound Interest (regular) **Ex**:I invest $500 at 10% APR for 8 years, compounded monthly? Quarterly?

3. Compound Interest (continuous) **Ex**:I invest $500 at 10% APR for 8 years with continuous compounding?

4. Annual Percentage Yield **Ex**: What is the Annual Percentage Yield (APY) for example 2?

**Examples**

**Example 1**: Suppose you wish to borrow $200 for five weeks and the amount of interest you must pay is $20 per $100 borrowed. What is the APR at which you are borrowing money?

**Example 2**: Suppose that $13,000 is deposited for eight years at 4% APR. Calculate the interest earned if interest is compounded weekly. Round your answer to the nearest cent.