Microsoft Excel Notes

- Relative reference – when the “fill handle” is dragged and formulas change automatically adjusting for the new position.
- Absolute reference – when the “fill handle” is dragged the same cell reference is kept where a “$” is added.

- 3-D Reference – combines sheet reference and cell reference.
  - For example: =SUM(Sheet1:Sheet3!B1:B3) adds all the values from B1 to B3 in all the sheets from Sheet1 to Sheet3.
  - The “!” separates the sheet reference from the cell reference.
  - The “:” between the first and third sheet says it should include all the sheets between Sheet1 and Sheet3.
  - The “:” between the first and the third cell says it should include all the cells between B1 and B3.

Pivot Table – an interactive table enabling you to quickly group and summarize large amounts of data.
**Loan Payment Formula**

\[
Payment = \left( \text{Interest} + \frac{\text{Interest}}{\left(1 + \frac{\text{Interest}}{\text{LoanTerm}}\right)^{\text{LoanTerm}} - 1} \right) \times \text{LoanAmount}
\]

- **Example:**
  - Interest = 8% Annually
  - Loan Amount = $150,000
  - Loan Term = 30 years
  - To find Monthly Payment
  - Monthly Rate = .08/12 (convert to monthly) = 0.006667
  - Loan Amount = $150,000
  - Loan Term = 30 x 12 (convert to months) = 360 months

**Payment Function**

- Monthly Payment Function given yearly InterestRate and yearly LoanTerm:
  - =PMT(InterestRate/12,LoanTerm*12,-LoanAmount)

**Excel Notes**

- For monthly payments given yearly Interest rate and yearly Loan Term:
  - =PMT(InterestRate/12,LoanTerm*12,-LoanAmount)
- For yearly payments given yearly Interest rate and yearly Loan Term:
  - =PMT(InterestRate,LoanTerm,-LoanAmount)
- For monthly payments given monthly Interest rate and monthly Loan Term:
  - =PMT(InterestRate,LoanTerm,-LoanAmount)
- For monthly payments given yearly Interest rate and monthly Loan Term:
  - =PMT(InterestRate/12,LoanTerm,-LoanAmount)

**Loan Payment**

\[
Payment = \left( (0.006667 + (0.006667 / (10.9357293970 - 1))) \times 150000 \right)
\]

- =1,100.65

- Loan Term = 30 years
- Loan Amount = $150,000
- InterestPayment

- Interest = $1,100.65
- Monthly Rate = .08/12 (convert to monthly) = 0.006667
- Loan Term = 360 months
- LoanAmountInterestInterestInterestPayment

- =1,100.65
- Monthly Rate = .08/12 (convert to monthly) = 0.006667
- Loan Term = 360 months
**Excel Notes**

- VLOOKUP looks for a value from a given cell in the leftmost column of a table and then returns a value in the same row from the column you specify.
- `=VLOOKUP(cell_of_lookup_value, cell_range_of_the_table, corresponding_column)`
- For example if the cell range is B3 to F6 and the lookup cell is A2 and the corresponding value is in column 3 of the cell the equation would be:
  - `=VLOOKUP(A2,B3:F6,3)`

**Excel Notes**

- IF is a logical function which checks to see if a condition is met, and returns one value if TRUE, and another value if FALSE.
- `=IF(logical_test, value_if_true, value_if_false)`
- For example, if $500 will be added to the price of a car if the down payment is less than $1000 and $0 will be added if the down payment is greater than or equal to $1000 then the function would be:
  - `=IF(DownPayment<1000,500,0)`

**Excel Notes**

- another IF example:
- For example, if there is a $300 assessment fee if the monthly payment plus $30 is less than $600 and $0 otherwise, then the function would be:
  - Logical_test: (Payment + 30) < 600
  - Value_if_true: 300
  - Value_if_false: 0
  - `=IF((Payment+30)<600,300,0)`

**The End**