**Lesson 3.2 – Rate of Change and Slope**

**Prior Knowledge:**

* On a graph, a coordinate point is listed as (x-coordinate, y-coordinate)
* Horizontal Table: the x-coordinate is always on top and the y-coordinate is on the bottom

EX 1:

|  |  |  |  |
| --- | --- | --- | --- |
| X | 1 | 2 | 3 |
| Y | 2 | 4 | 6 |

* Vertical Table: the x-coordinate is on the left and the y-coordinate would be on the right

EX 2:

|  |  |
| --- | --- |
| X | Y |
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |
| 4 | 8 |

**Vocabulary**:

* *Rate of Change* – the ratio of the amount of change in the dependent variable (output/y-coordinate) to the change of the independent variable (input/x-coordinate)

EX 3:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # of lawns (x) | 1 | 3 | 6 | 8 |
| Amount (y) | 15 | 45 | 90 | 120 |

 $\frac{45-15}{3-1}$ = $\frac{30}{2}$ = $15 per lawn

* *Slope* – the ratio of the change in y-values (rise) to the change in x-values (run)
* **M =** $\frac{y\_{2- y\_{1}}}{x\_{2}- x\_{1}}$ **:** ($X\_{1 }$, $Y\_{1}$) – Coordinate point closest to the Origin (0,0)

 ($X\_{2}$ , $Y\_{2}$) – Second Coordinate point of your choosing