## Linear vs. Nonlinear

Today's Learning Targets:
8.4 I can use a table of values to determine if a function is linear or non-linear.
8.5 I can graph a function from a table of ordered pairs.

## Graphs



| This is a |
| :--- |
| a constant rate |
| of change (slope). |



| This is $\quad$ because it |
| :--- |
|  |
| a constant rate of <br> change (slope). |

Functions - a rule in which every $\qquad$
Linear functions - a function that has a constant that results in a $\qquad$ when graphed.
Nonlinear functions - a function that
$\qquad$ and
when graphed.

Table As " $x$ " increases by 1 , how does " $y$ " change?


$$
\text { ?〇〇民 } \begin{aligned}
& \text { As " } x \text { " increases by } 1, \\
& \text { how does " } y \text { " change? }
\end{aligned}
$$



Is the relationship Linear or Nonlinear？

| x | y | x | y | x | y |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 0 | 1 | －5 | 0 | 2 |
| 1 | 2 | 2 | －2 | 1 | 6 |
| 2 | 4 | 3 | 2 | 3 | 14 |
| 3 | 6 | 4 | 5 | 4 | 18 |
| 4 | 8 |  |  |  |  |



Graph the function from the table:


