

GRAPHING

➤ **Change** - when something is altered at a location, across a space, or over time

Examples of changes in our environment: _____

- **event** - every change or series of changes

➤ **Rate of change** - describes change with respect to time (how fast or slow something is happening)

Examples of **gradual** change: _____

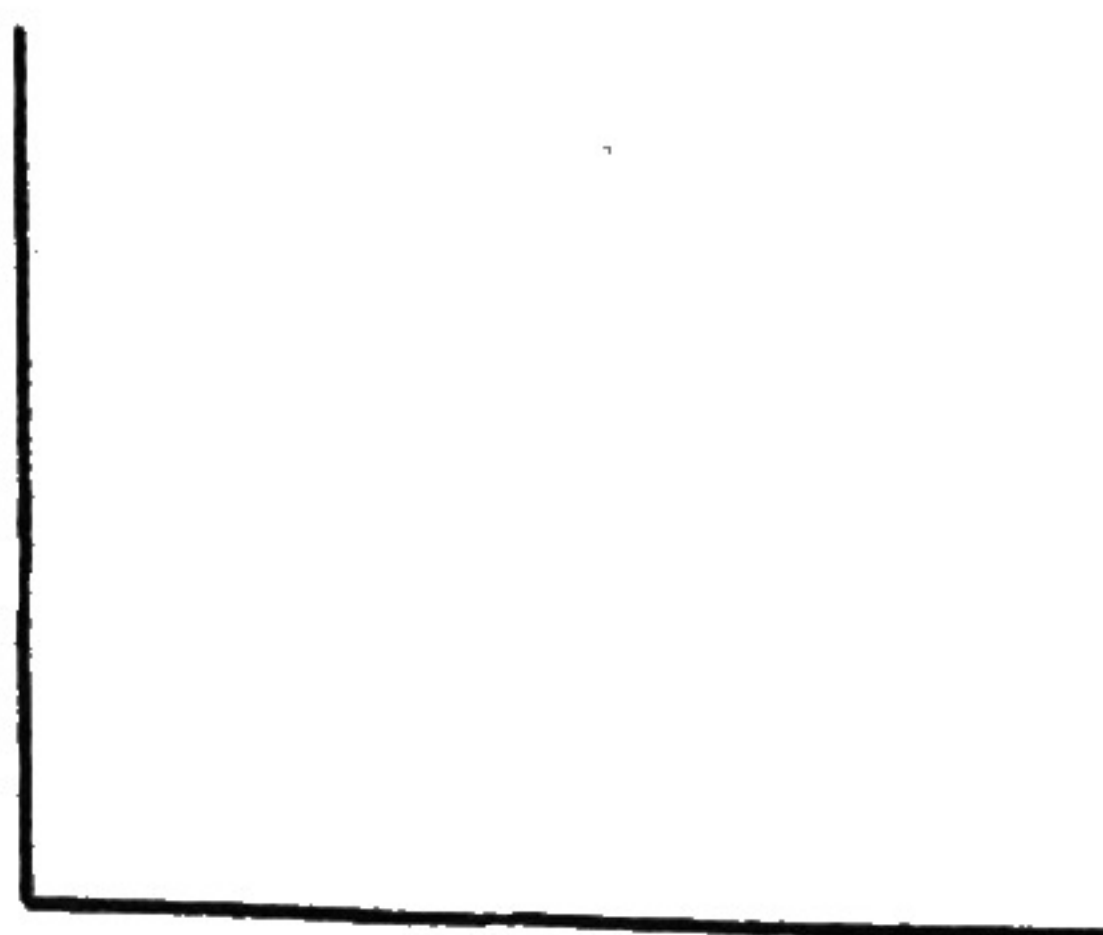
Examples of **instantaneous** change: _____

- **dynamic equilibrium** - the overall **balance** between all the many changes that are happening constantly on Earth

➤ **Graph** - a representation of how a **dependent** variable changes with respect to an **independent** variable

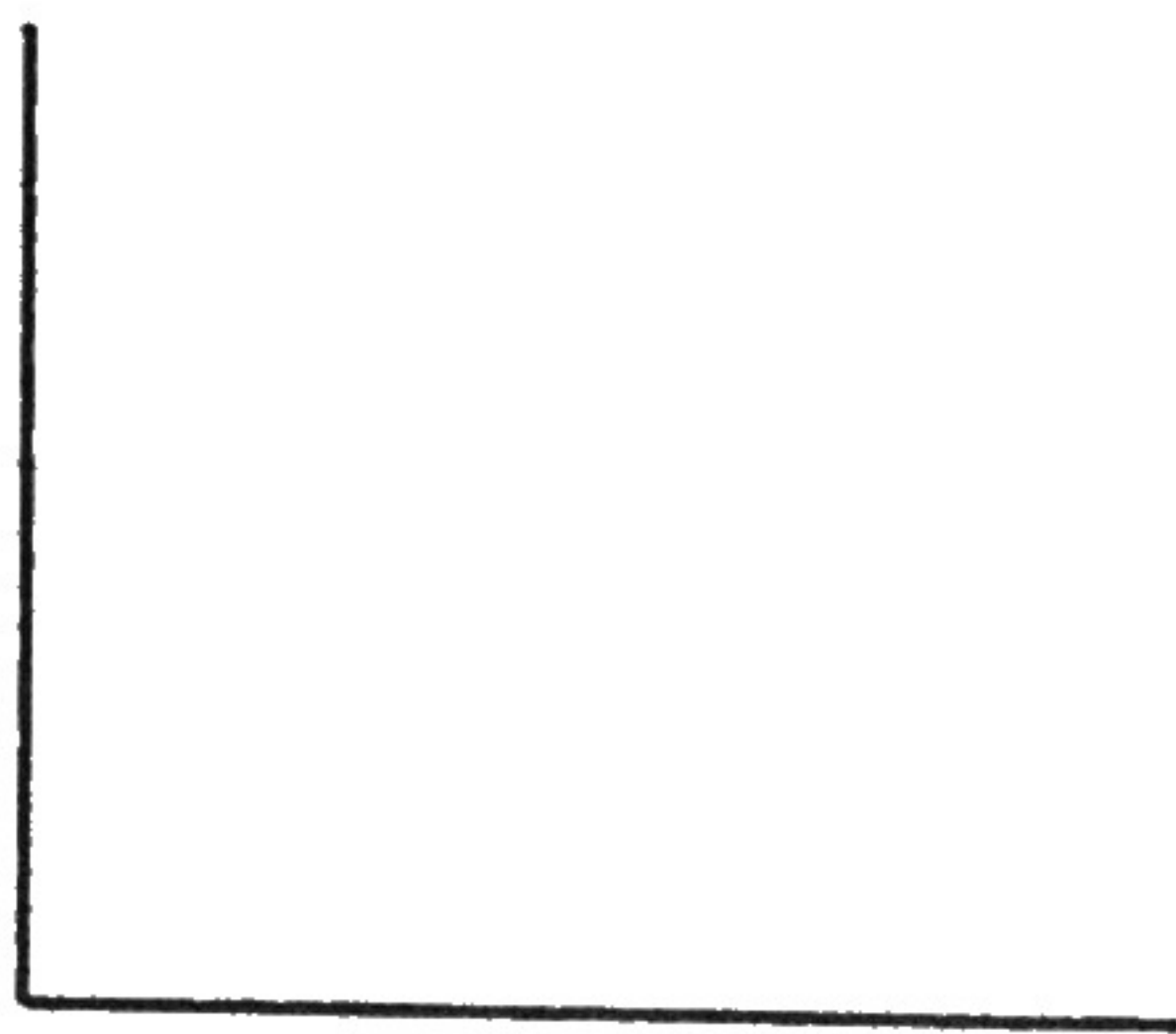
- **independent variable** - the **given** values; the values that you know
- always plotted on the **X** axis
- **dependent variable** - the data you are trying to find; will **vary** with time
- always plotted on the **Y** axis

EX: temperature, number of hurricanes, speed



- **slope** - how fast or slow data is changing is determined by the slope of the graph
* the steeper the slope, the greater the rate of change

Which line is changing the fastest?



➤ Interpreting Graphs

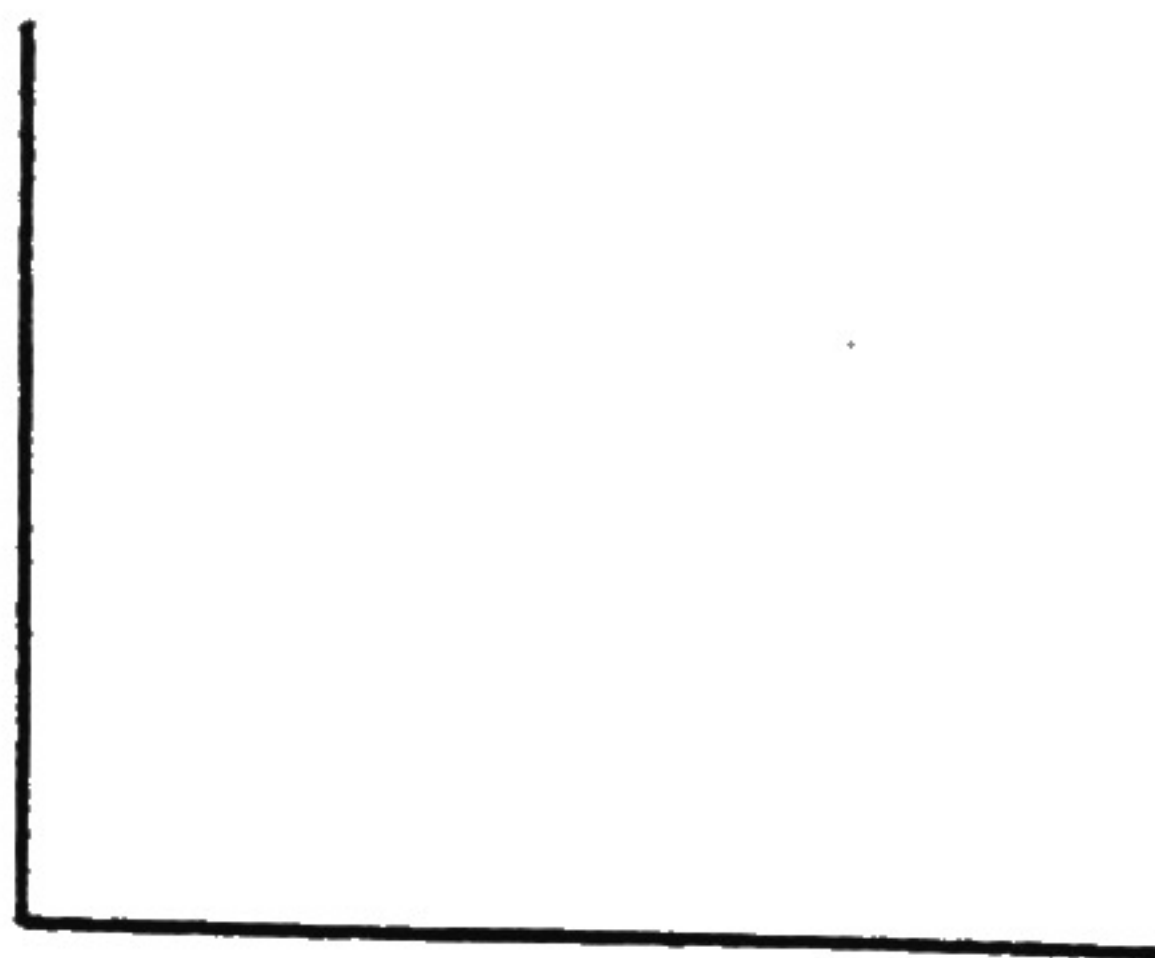
- **interface** - where regions with different properties come together; where two things meet
- **interpolate** - to determine a value from a graph; to get information
- **extrapolate** - to extend a graph beyond the range of the actual data; extend lines

➤ Types of Graphs

1. **direct relationship** - when both variables are doing the same thing;
if X increases, Y increases, and if X decreases, Y decreases

Examples: _____

- If the rate of change **remains constant**, the line plotted will be **straight**.



- If the rate **changes**, the line plotted will be **curved**.

Rate Increasing



Rate Decreasing



2. **indirect relationship** - when the two variables are doing the opposite of each other; when X increases, Y decreases, and when X decreases, Y increases

Examples: _____

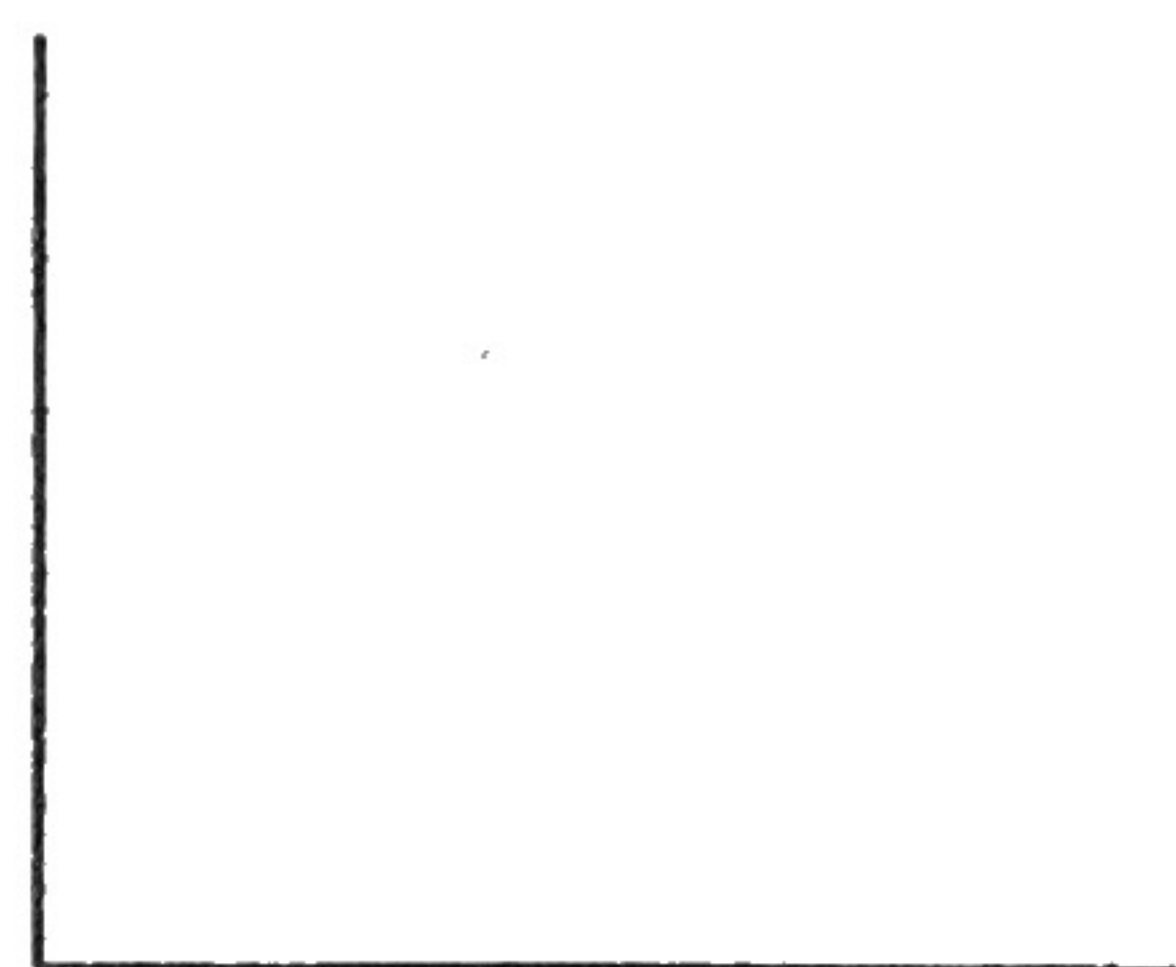
A Constant Rate of Change



Rate Increasing



Rate Decreasing

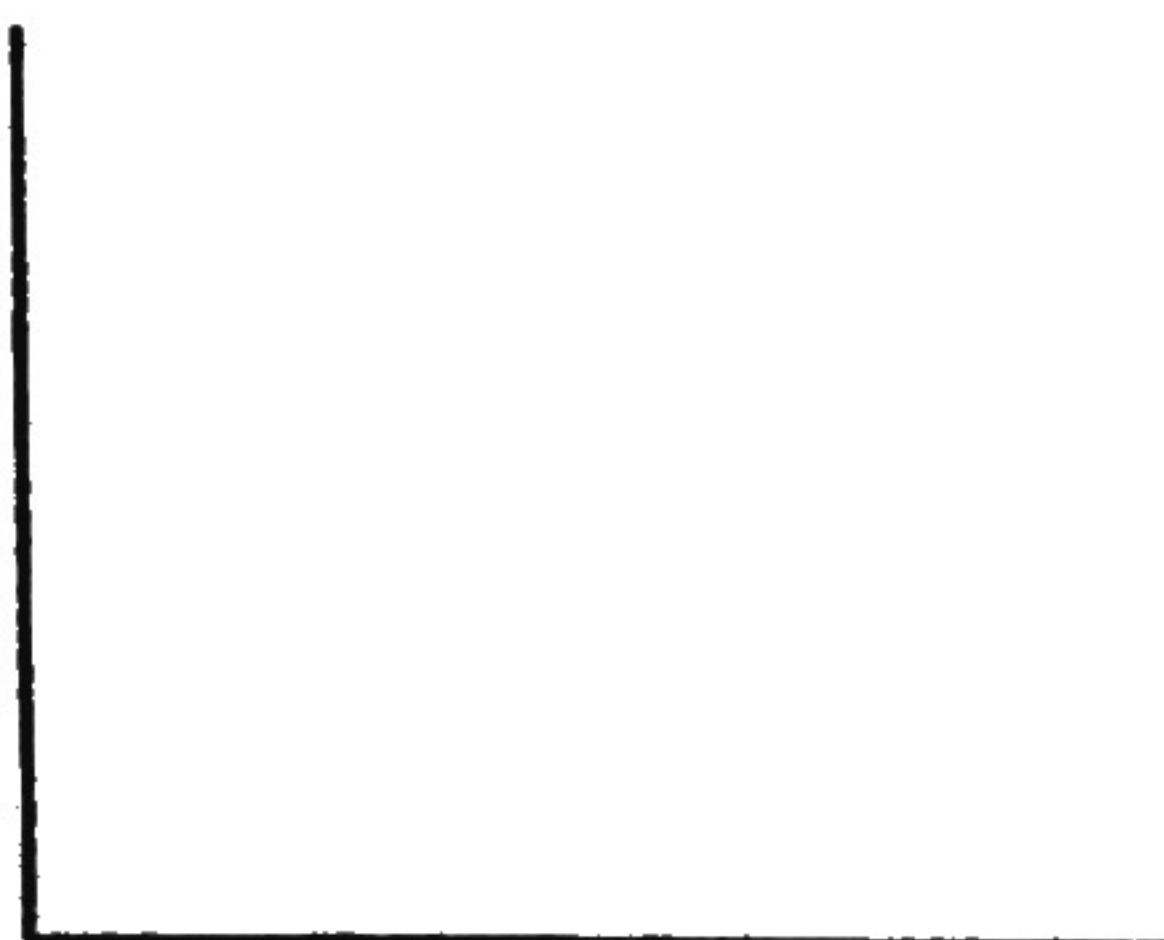


3. **cyclic relationship** - follows a regular pattern; repeating graph; data is predictable; environmental changes are cyclic

Examples: _____



4. **no change** - a horizontal line is plotted since the dependent variable is not changing, it is remaining constant



Examples: _____