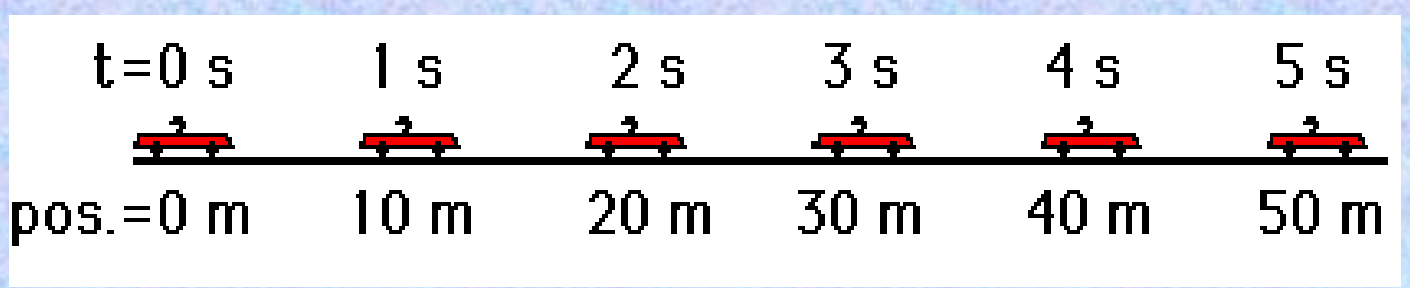
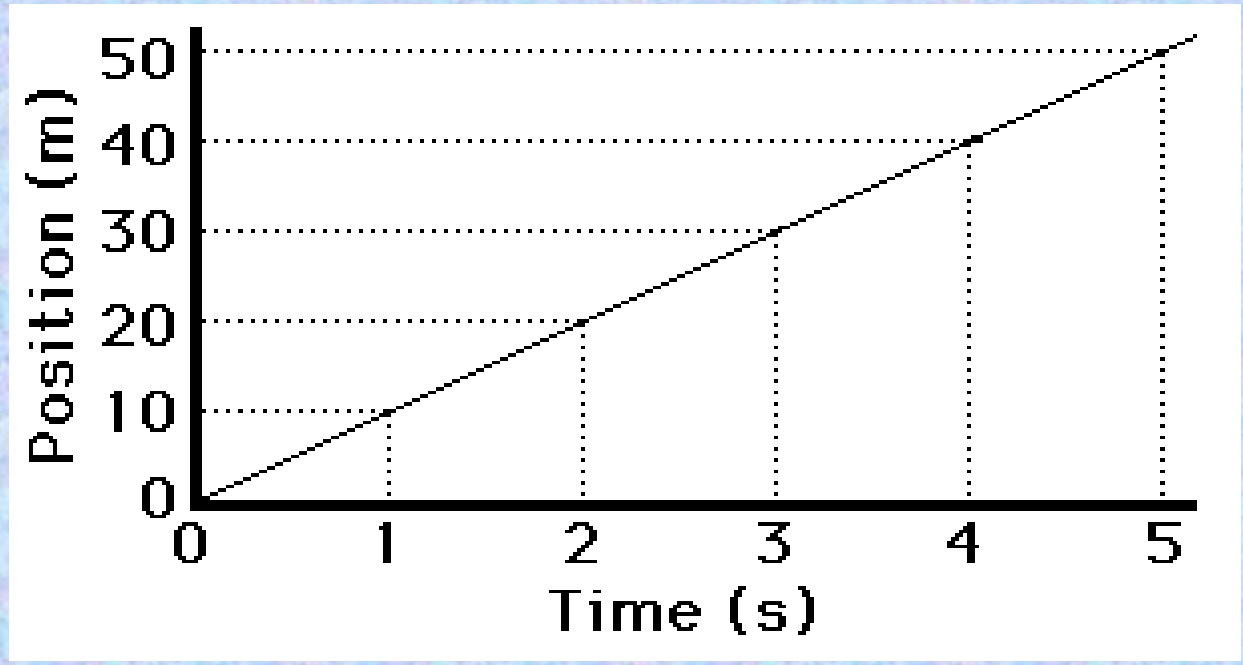
# Graphing Linear Motion

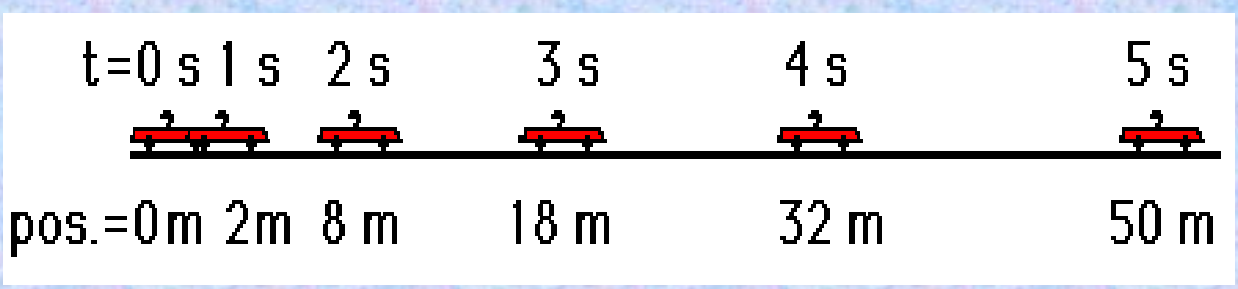
Regents Physics

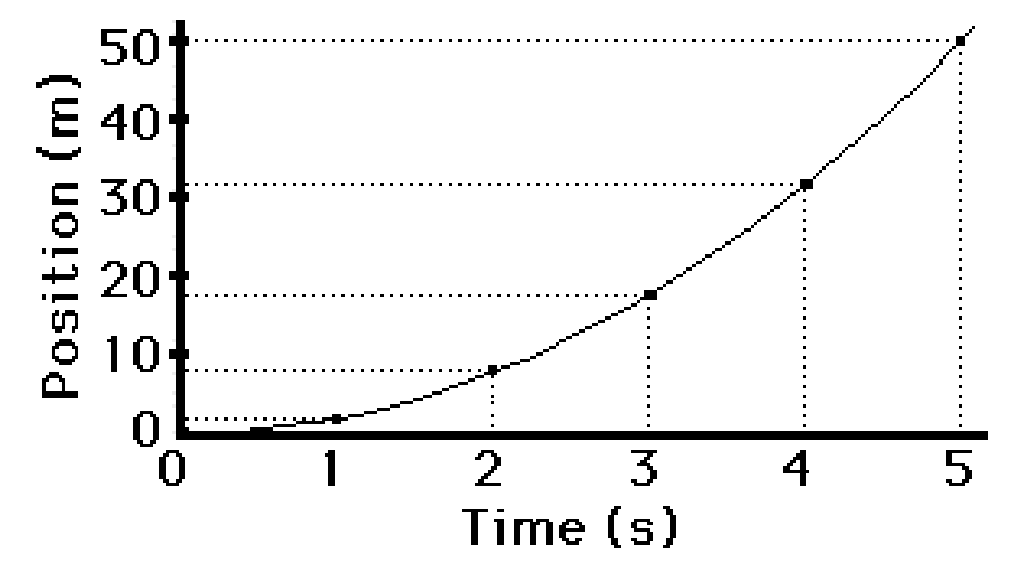
# **Constant, rightward (+) velocity -** of +10 m/s.



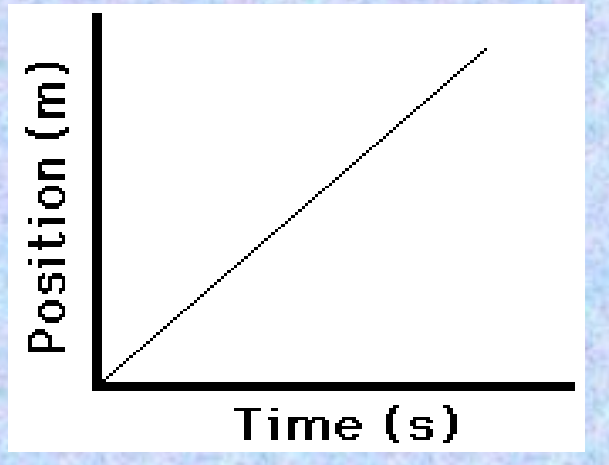



**Rightward (+), changing velocity -** that is, a car that is moving rightward but speeding up or *accelerating*.

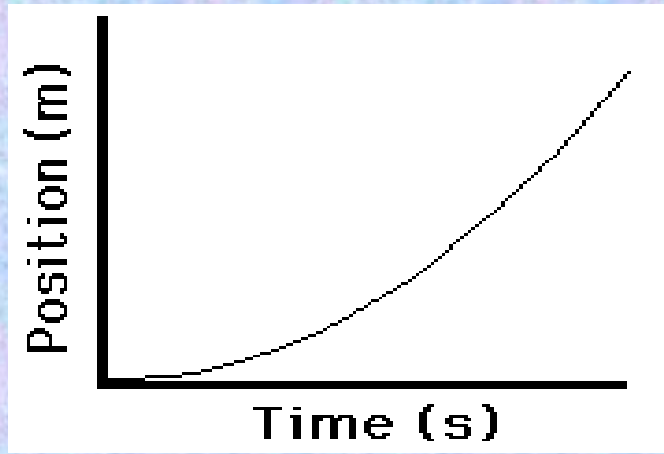


**Constant Velocity**
**Positive Velocity**




**Positive Velocity**
**Changing Velocity (acceleration)**




The slope of the line on a position-time graph reveals useful information about the velocity of the object.

**"As the slope goes, so goes the velocity."**

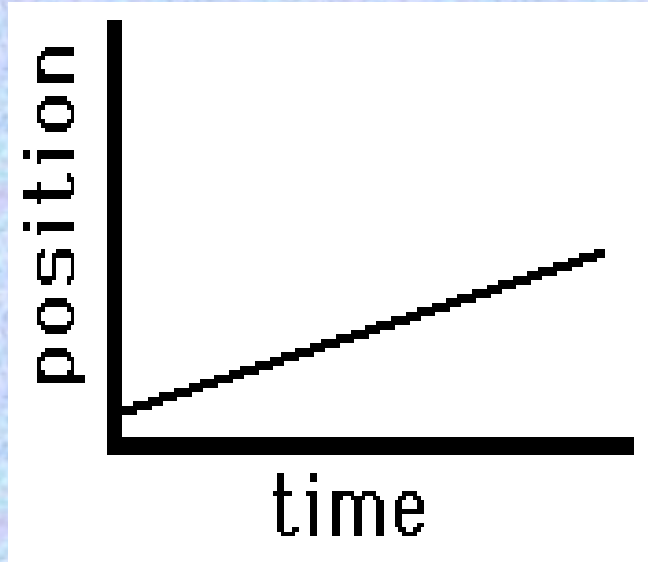
Whatever characteristics the velocity has, the slope will exhibit the same (and vice versa).

- If the velocity is constant, then the slope is constant (i.e., a straight line).

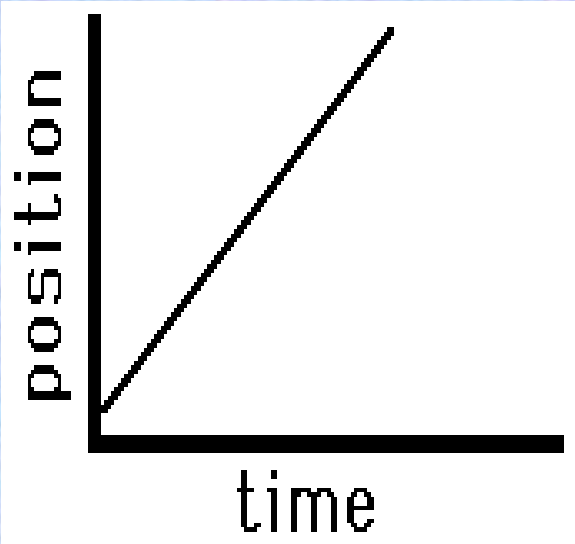
- If the velocity is changing, then the slope is changing (i.e., a curved line).

- If the velocity is positive, then the slope is positive (i.e., moving upwards and to the right).

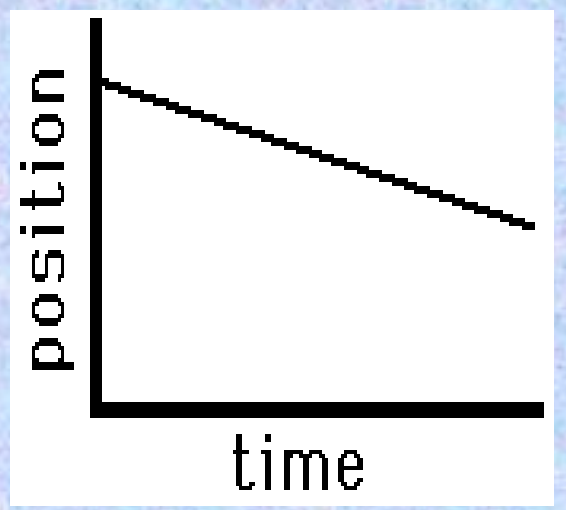
**Slow, Rightward (+)**
**Constant Velocity**



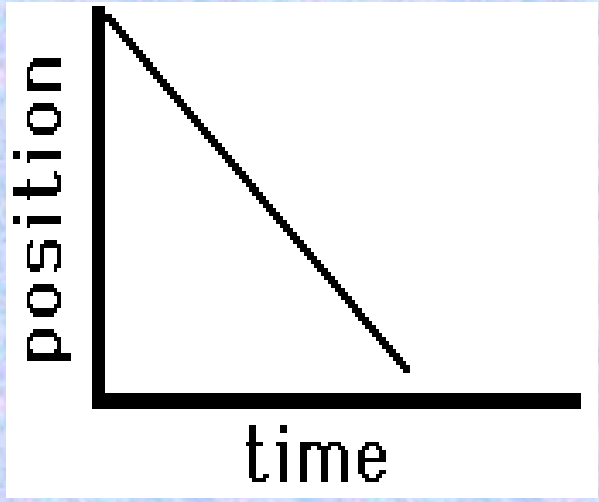

**Fast, Rightward (+)**
**Constant Velocity**



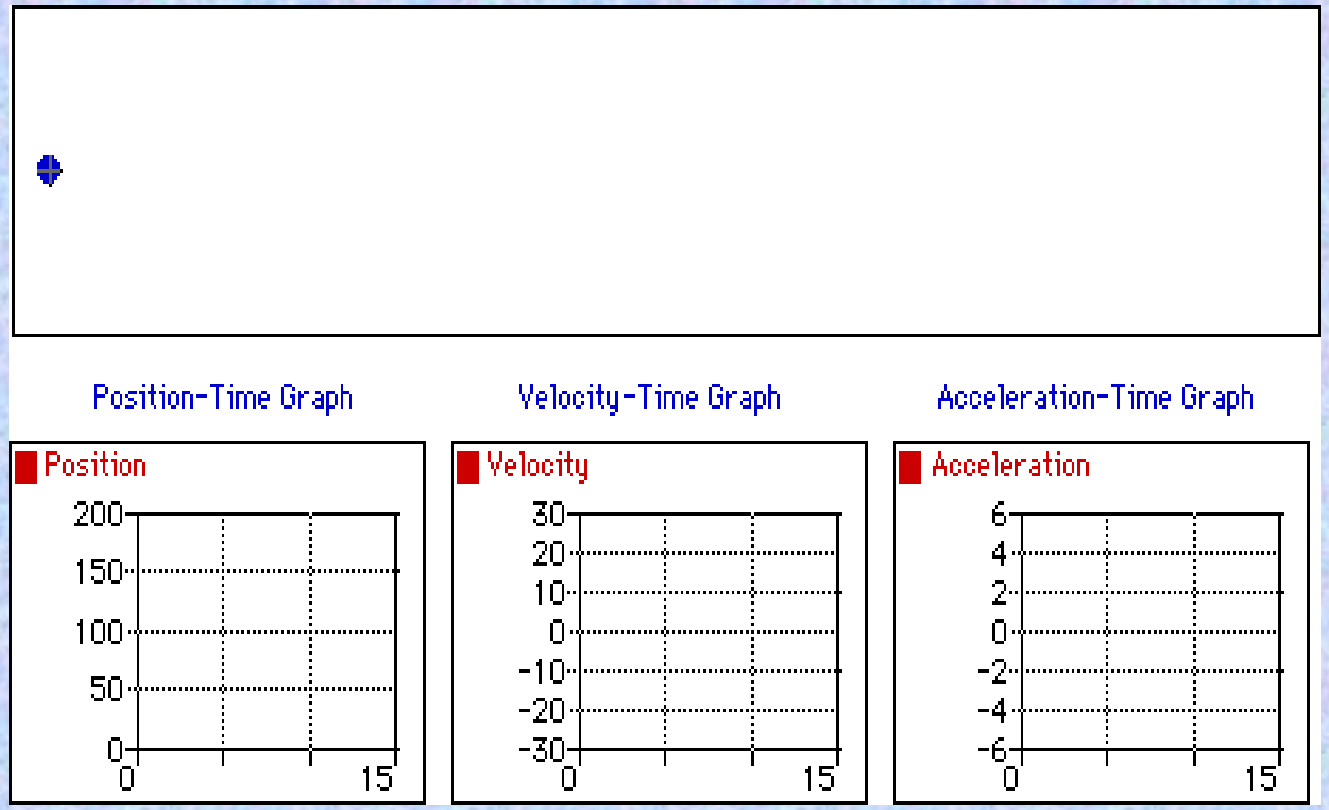
**Slow, Leftward (-)**
**Constant Velocity**



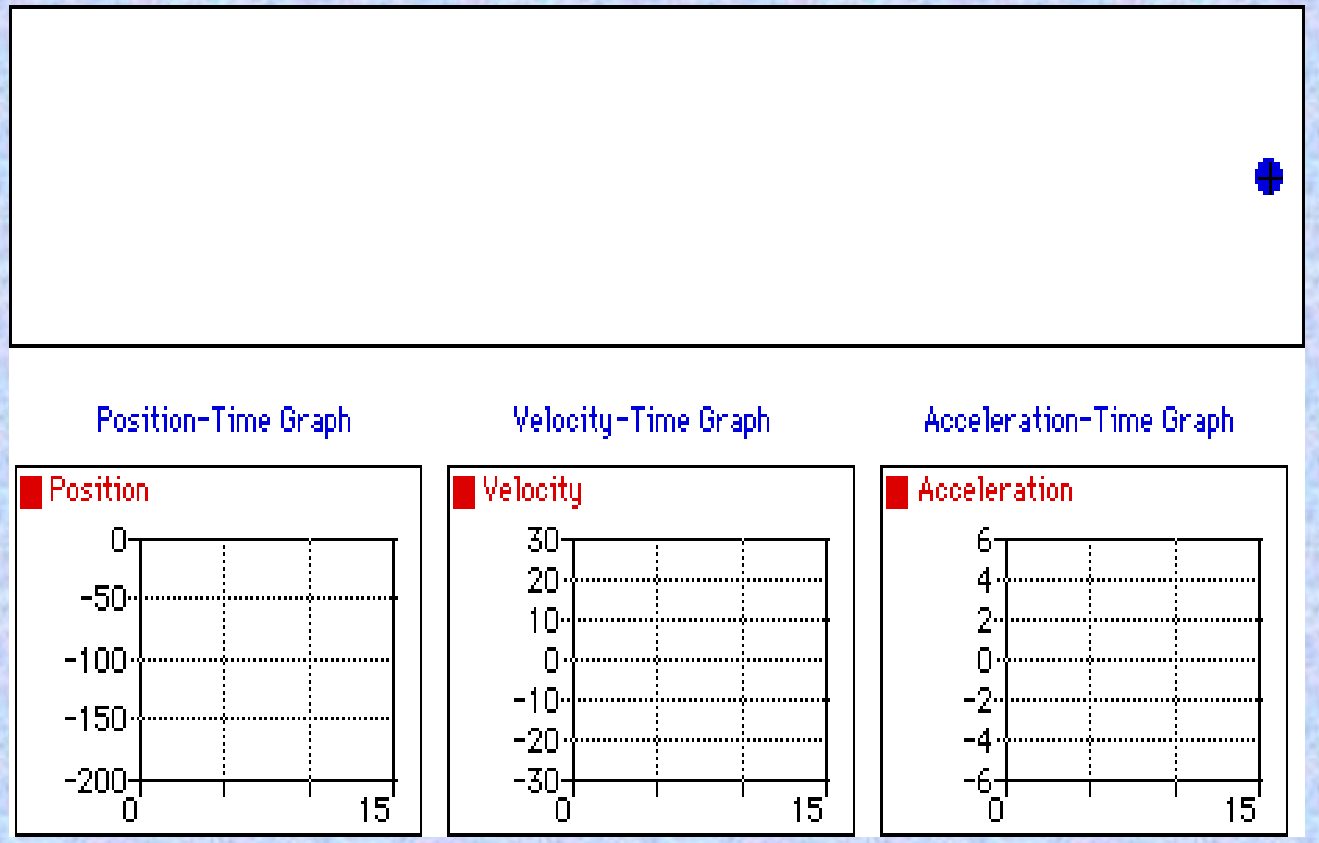

**Fast, Leftward (-)**
**Constant Velocity**



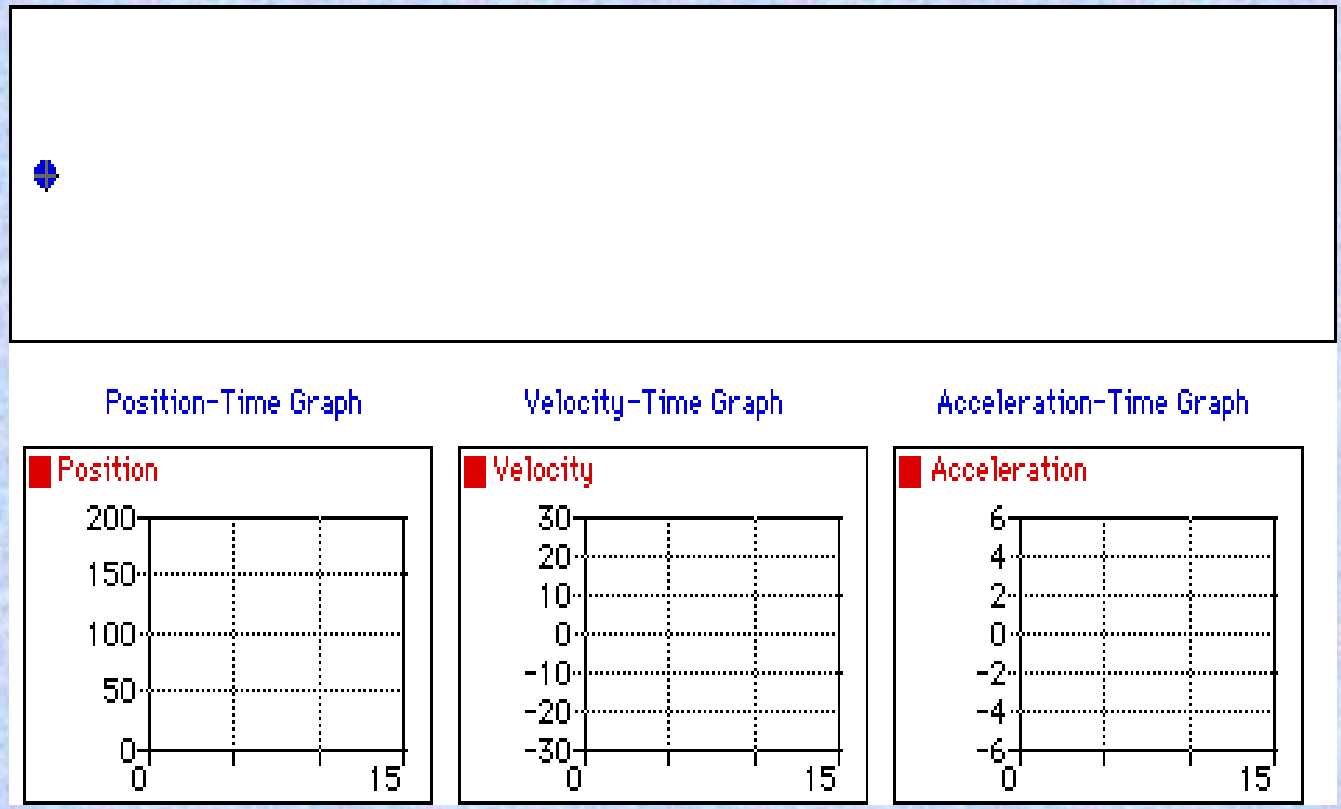
# Constant Rightward Velocity



# Constant Leftward Velocity



# Rightward Velocity With a Rightward Acceleration



# Leftward Velocity With a Leftward Acceleration