## Interpreting Motion Graphs

### Distance Time Graphs
www.cazoommaths.com

**Distance** (vertical axis) / **Time** (horizontal axis)

- Horizontal line shows stop
- Steeper gradient shows faster speed
- Sloped line shows constant speed back towards start
- Sloped gradient shows constant speed
- Curve upwards shows acceleration
- Curve downwards shows deceleration
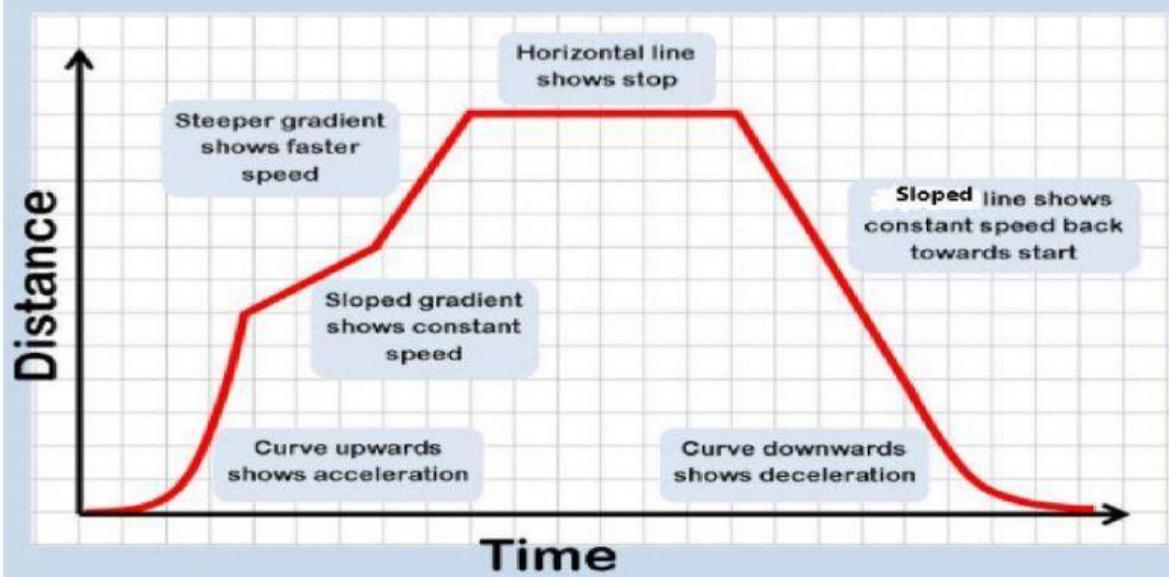
## Part I

### interpreting graphs

### Use the graph above to complete the missing information **inside the boxes**

**Distance** (vertical axis) / **Time** (horizontal axis)
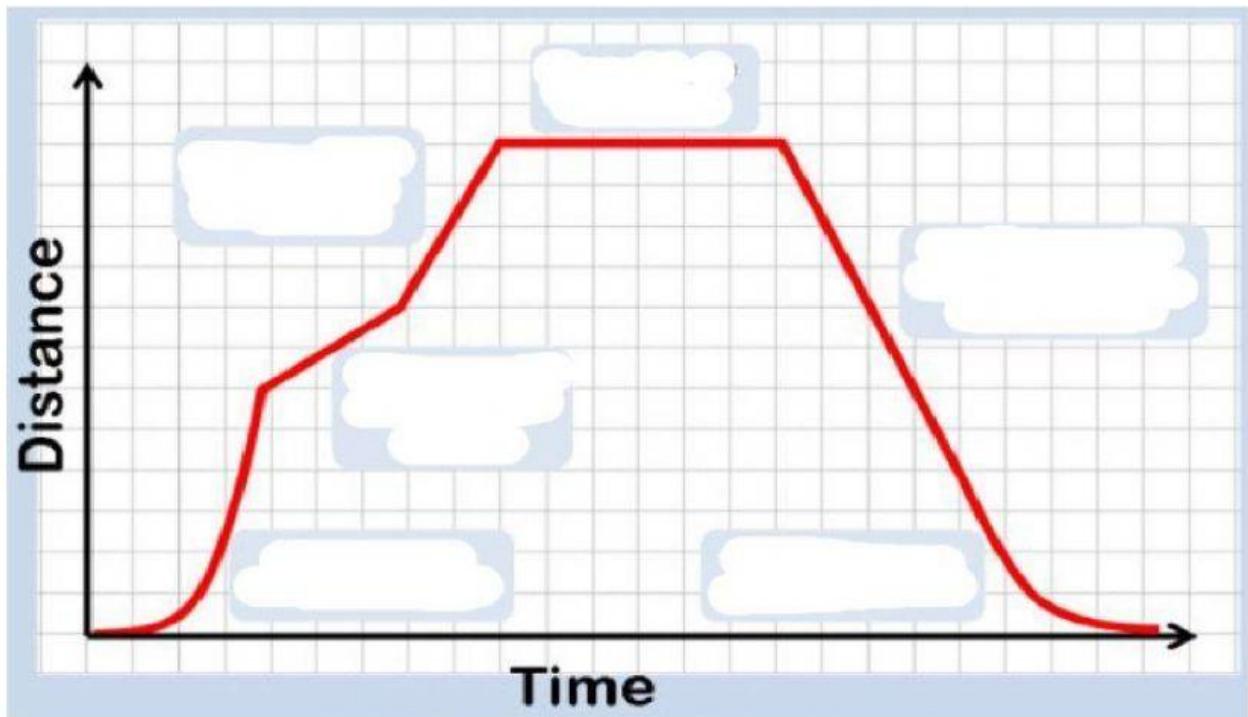
# Part II
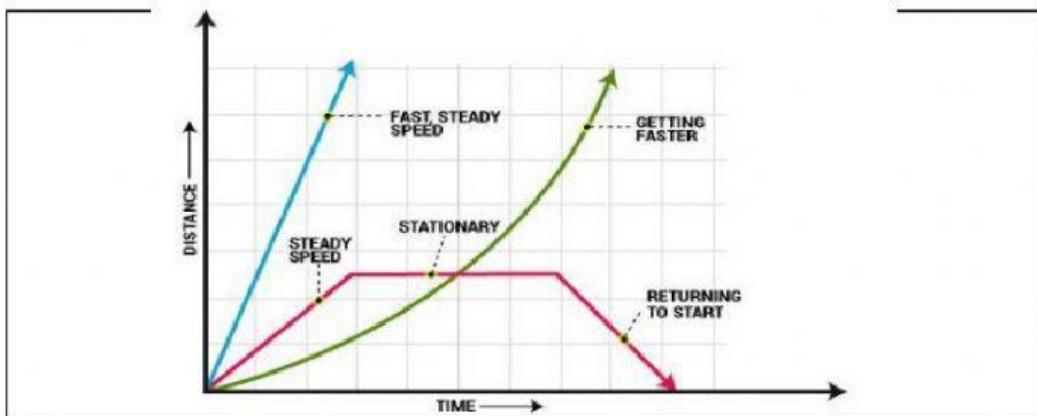


## Multiple Choice

| | answer |
|---|---|
| **1.** This position vs time graph (speed) represents | |
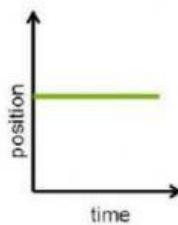


a) **Object is not moving is stationary**    b) **object is speeding**    c) **constant speed**

| | answer |
|---|---|
| **2.** This position vs time graph (speed) represents | |
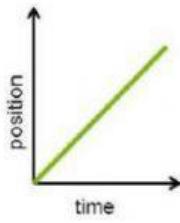


a) **Constant speed or steady speed**    b) **accelerating**    c) **not moving**

| | answer |
|---|---|
| **3.** This position vs time graph (speed) represents | |
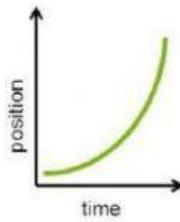


a) **Rest**    b) **accelerating/ getting faster  up**    c) **slowing down**

**4. These two graphs represent constant speed**
   **Which graph is faster, the left or the right graph?**

answer
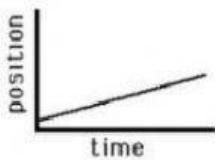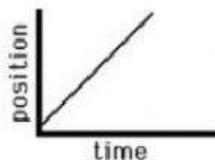


a)  **Left graph**                    b) **Right graph**

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**5)**
- **Speed** only has **magnitude**
- **Velocity** has **magnitude and direction**

**Write speed or velocity**

**5 m/s** _____

**5 m/s North** _____

**40 kilometer per hour** _____

**40 kilometer per hour  South** _____

**456 miles/second** _____

**456 miles/second going West** _____

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**6)**
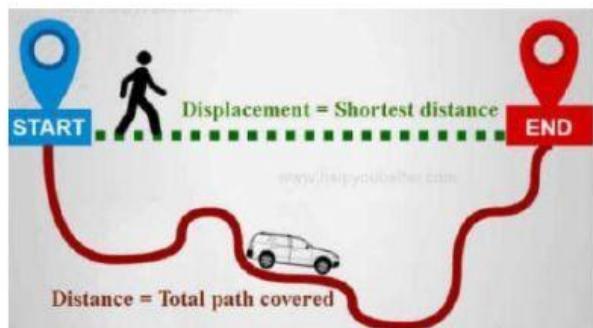


**What is displacement?** _____

**What is distance?** _____

**Use this digram to complete questions 7, 8, and 9.**
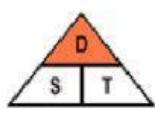
Distance = Speed x Time
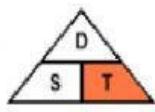
Time = $\dfrac{\text{Distance}}{\text{Speed}}$
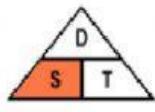
Speed = $\dfrac{\text{Distance}}{\text{Time}}$

**7) What is the formula to find the Distance?**

| Distance | = | | x | |

**8) What is the formula to find the Time of travel?**

Time = ------------------- 

**9) What is the formula to find the Speed?**

Speed = ------------------

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**10)**

You drove a **distance of 48 miles** and the **time you took was 6 hours.**

**What was your speed?**

**d= 48 miles**

**t= 6 hours**

S= $\dfrac{\phantom{--}}{\phantom{--}}$ = ---------------- =