**FPS – Velocity and Acceleration in Graphs**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| I can… |
| *Interpret graphs to solve for velocity and acceleration.*  *Identify velocity and acceleration given various graphs.* |

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| --- | --- |
| Bellwork | |
| Image result for blank distance time graph | *On the graph to the left, show an object travelling at a constant speed.* |

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| ***Graphs*** | | | | |
| 1. **Distance vs. Time graphs** | |  | | |
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| 1. **Velocity vs. Time graphs** | | |  | |
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|  | | |  | |
| **Practice!** | | | | |

The distance-time graphs below represent the motion of a car. Match the descriptions

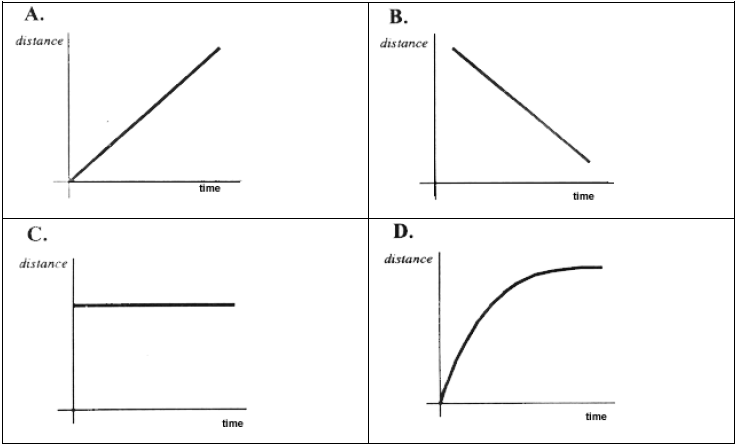
with the graphs. **Explain your answers.**

**Descriptions:**

1. The car is stopped.

2. The car is traveling at a constant speed.

3. The speed of the car is decreasing.

4. The car is coming back.  
  
Graph A matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Graph B matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Graph C matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Graph D matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
The speed-time graphs below represent the motion of a car. Match the descriptions

with the graphs**. Explain your answers.**

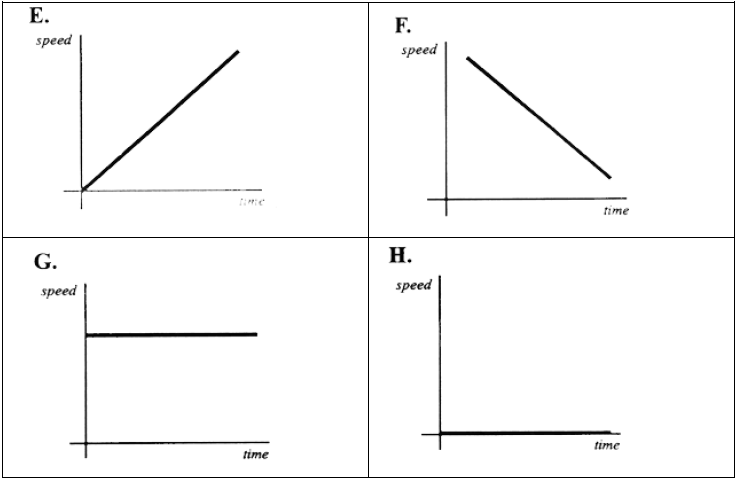
**Descriptions:**

5. The car is stopped.

6. The car is traveling at a constant speed.

7. The car is accelerating.

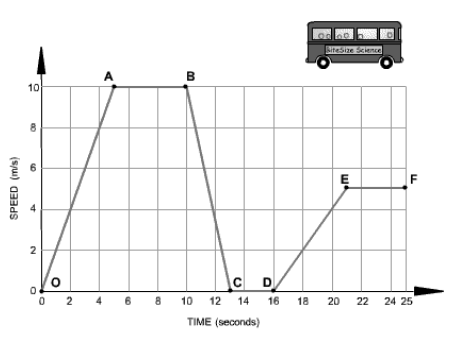
8. The car is slowing down.

  
Graph E matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Graph F matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Graph G matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Graph H matches description \_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The graph below shows how the speed of a bus changes during part of a journey.  
  


Choose the correct words from the following list to describe the motion during each

segment of the journey to fill in the blanks.

• accelerating

• decelerating

• constant speed

• at rest

**Segment 0-A** The bus is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Its speed changes

from 0 to 10 m/s in 5 seconds.

**Segment A-B** The bus is moving at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of 10

m/s for 5 seconds.

**Segment B-C** The bus is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It is slowing

down from 10 m/s to rest in 3 seconds.

**Segment C-D** The bus is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It has

stopped.

**Segment D-E** The bus is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

It is gradually increasing in speed.