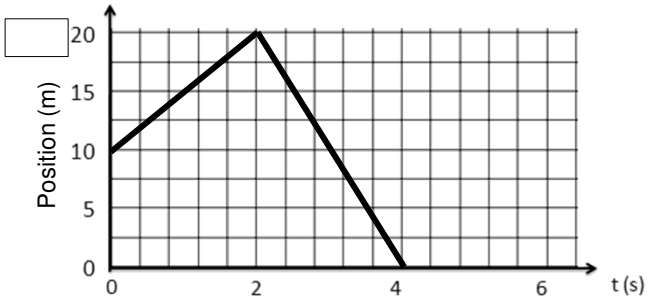
Graphing Motion in One Dimension

1

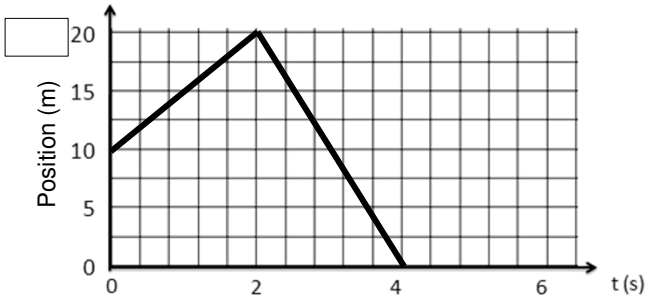
Position vs. Time Graphs



- **What distance did the object travel after 4 seconds?**
- **What is the displacement after the first 4 seconds?**

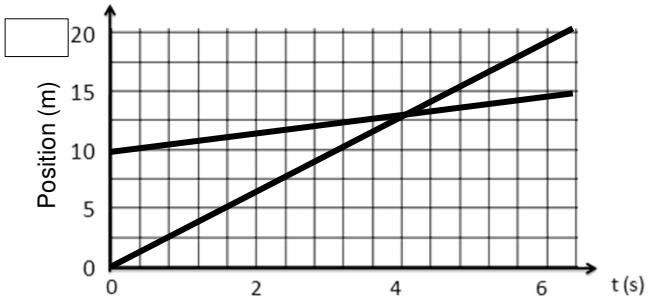
2

Position vs. Time Graphs



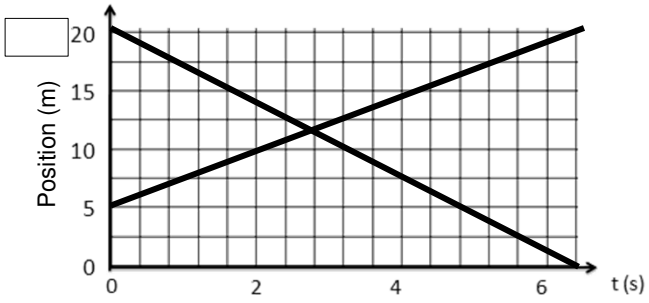
- **What are the units of the slope on the graph?**
- **What quantity is measured in this unit?**

Position vs. Time Graphs



- **Describe the motion of the two objects:**
  - **Do they start at the same location?**
  - **Are they traveling at the same rate?**
  - **Are they traveling in the same direction?**

Position vs. Time Graphs



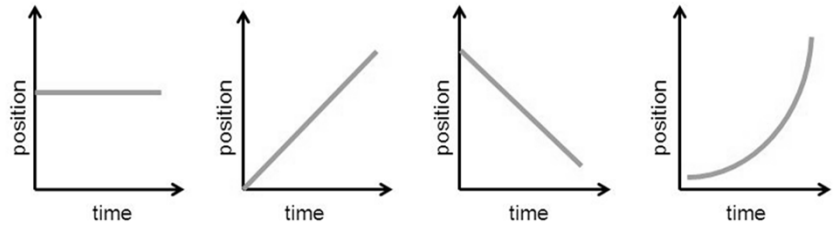
- **Describe the motion of the two objects:**
  - **Do they start at the same location?**
  - **Are they traveling at the same rate?**
  - **Are they traveling in the same direction?**

Position-Time Graphs

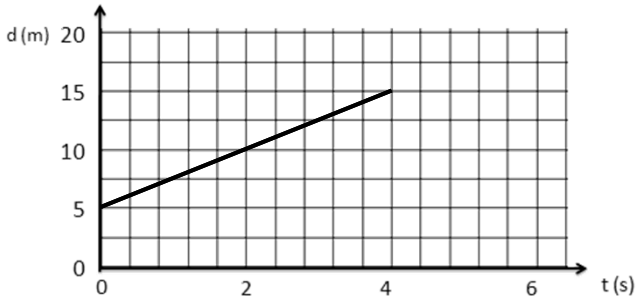
- **Shows the position of an object or objects over time.**
- **Can be used to compare the position of two or more objects.**
- **<u>Slope</u> tells you the <u>velocity</u> of the object.**

Position-Time Graphs

- **Describe the motion of the graphs below:**

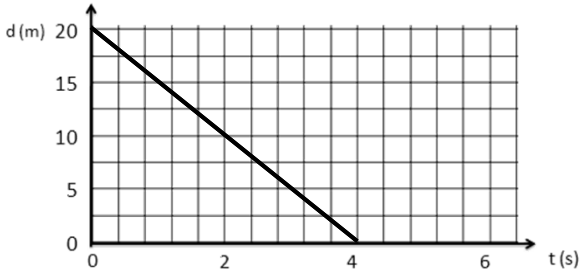


Position Time Graphs



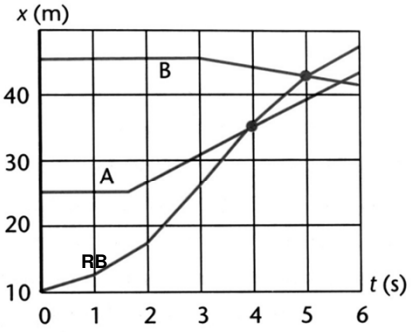
- **Describe the motion of the object.**
- **What is the unique equation for the object?**
- **Determine the object's average velocity.**
- **Determine the object's position at 12s.**

Position Time Graphs



- **Describe the motion of the object.**
- **Determine the object's average velocity.**
- **What is the unique equation for the object?**
- **Determine the object's position at 8s.**

Graphing Two or More Objects



- **Rank the velocity of the players at 4.5 seconds from fast to slow.**
- **When and where can A and B tackle the RB?**
- **Who has the greatest velocity? When?**
- **When are the players traveling at the same velocity?**