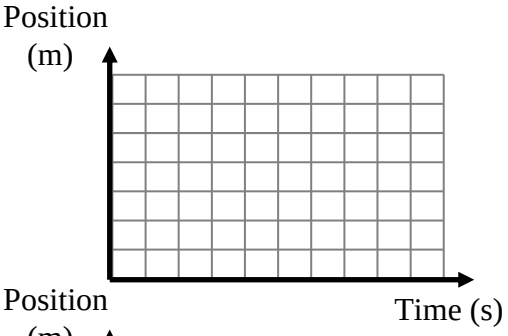
Graphing Motion

Position – time graphs do just as they sound. They show an object's position as time passes. As time goes on how can you graph an object's motion? Let's investigate.

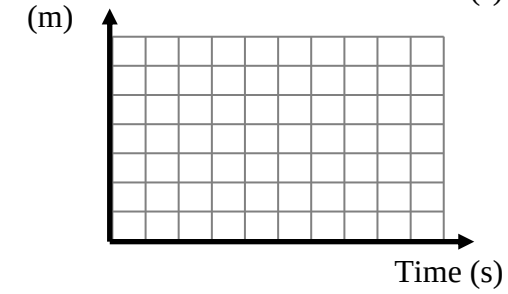
Directions:
Read each scenario. With your teacher's help, illustrate the scenario on the graph to the right.

Define **Reference point**: _____

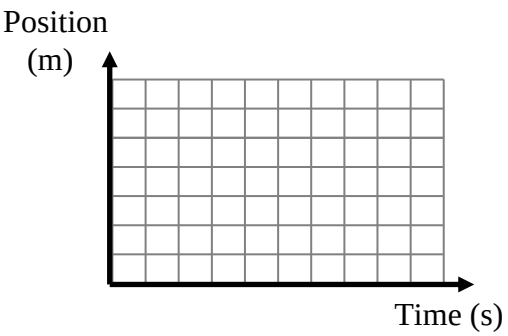
1. How do you show an object that is stopped 2 meters away from the reference point?



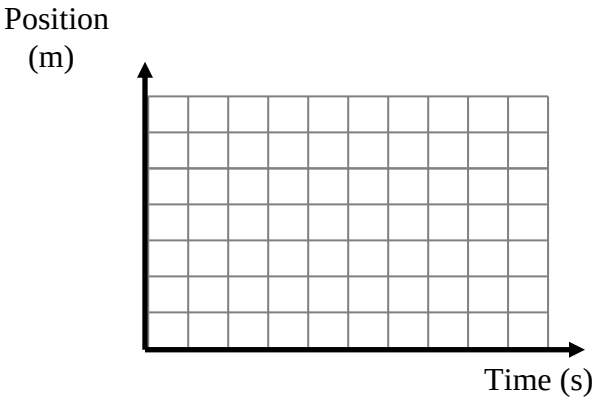
2. How do you show an object moving forward at a speed of 1 meter every second that started at the reference point?



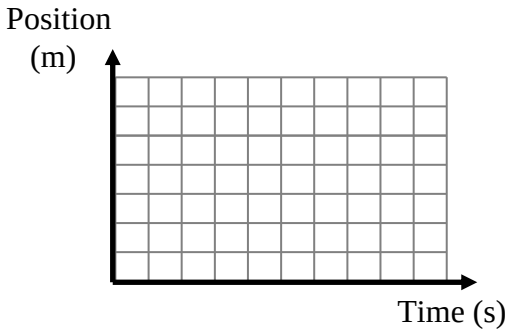
3. How do you show an object moving forward at a speed of 3 meters every second that started 1 meter away from the reference point?



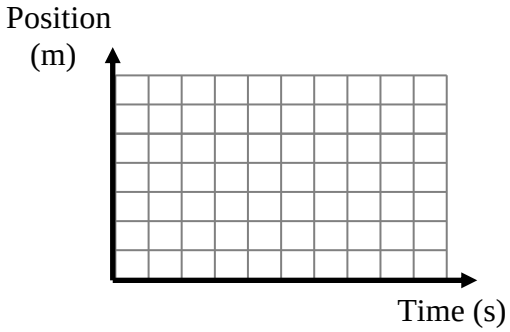
4. Look at the graph to the right. Which line represents the object that is moving faster?
   Line _____
   How can you tell?
   _____
   _____
   _____
   _____



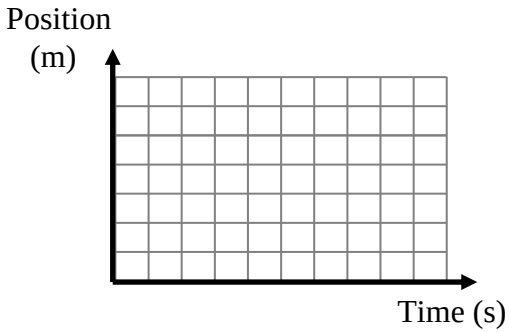
5. How do you show an object moving back toward the reference point at a rate of 3 meters every second? Start 6 meters away from the reference point.



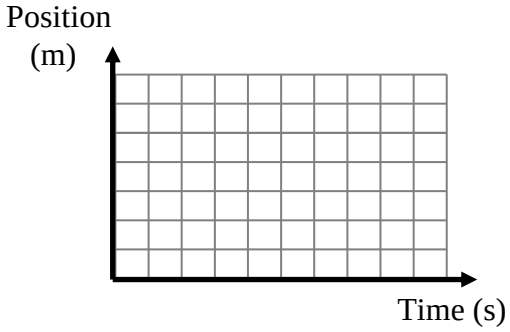
6. How do you show an object that is stopped 2 meters away from the reference point for three seconds and then begins moving away from the reference point at a speed of 2 meters every second?



7. How do you show an object that is stopped for three seconds and then begins moving toward the reference point at a speed of 2 meters every second? Begin 7 meters away from the reference point.



8. Starting at the reference point, show an object that moves away at a speed of 1 meter every second for 2 seconds, stops for three seconds, then continues moving away from the reference point at the same speed.



9. Starting at the reference point, show an object that moves away at a speed of 1 meter every second for 2 seconds, stops for three seconds, then continues moving back toward the reference point at a speed of 2 meters every second.