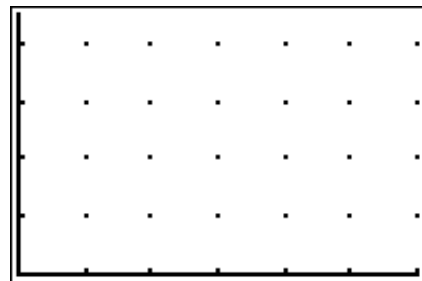
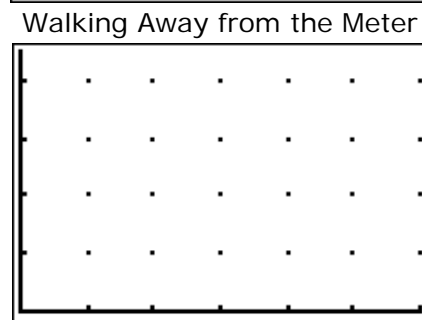


# Building Understanding for Slope through Distance-Time Graphs and the CBR

1. One student will produce a distance time graph by walking away from the meter. Make a sketch of their graph at the right.



2. A second student will produce a distance time graph by walking toward the meter. Make a sketch of their graph at the right.

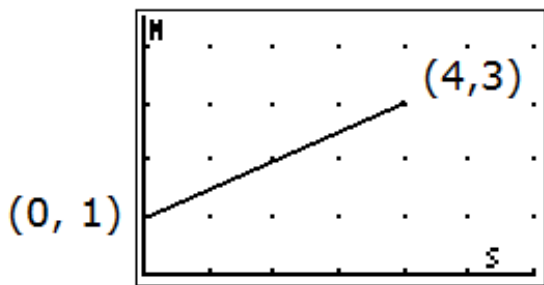


3. How are the graphs similar? How are they different?

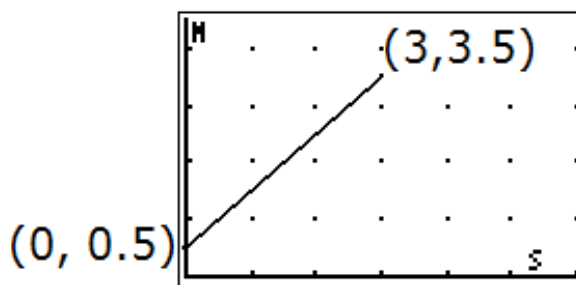
4. The graphs below were produced by two other students walking in front of the meter. The coordinates describe the time and position at the beginning and end of the walk.

Walking Away from the Meter

Walking Toward the Meter



Student 3



Student 4

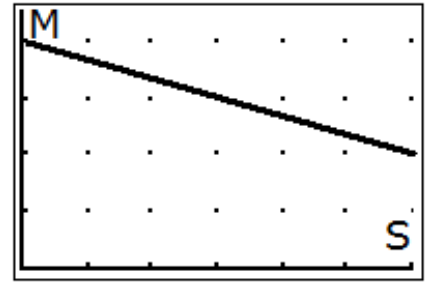
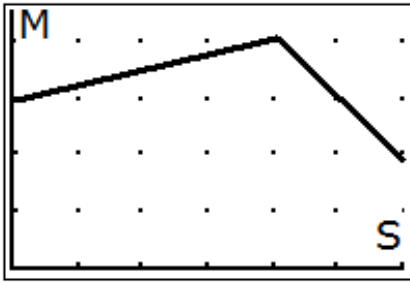
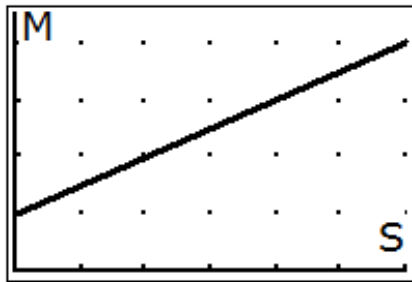
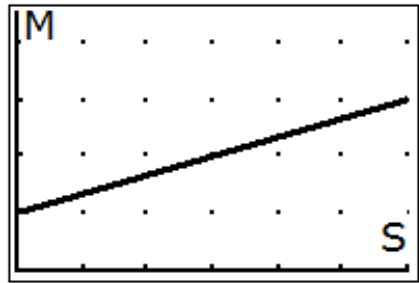
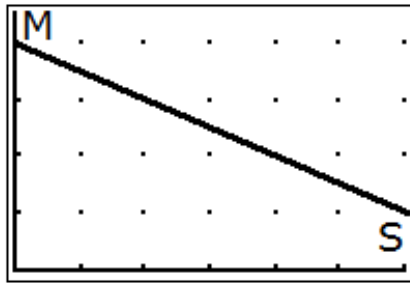
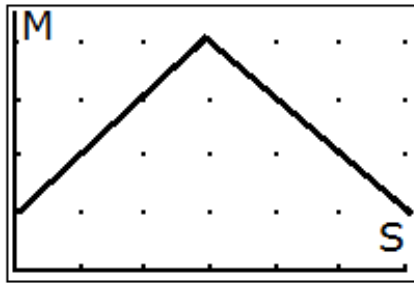
Student 3 started the walk at 1 meter from the CBR and ended the walk after 4 seconds at a distance 3 meters from the CBR.

How fast did Student 3 walk? How can you tell this from the graph?

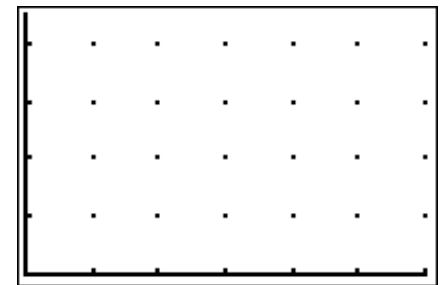
Student 4 started the walk at  $\frac{1}{2}$  meter from the CBR and walked for 3 seconds until they reached a position of 3.5 meters from the CBR.

How fast did Student 4 walk? How can you tell this from the graph?

5. Each of the graphs below can be reproduced on the graphing calculator. Your group will be assigned one of the graphs to produce. Study each graph. Decide where you must start your walk, end your walk, and how fast you must walk. Practice walking this path in the required time. When you are ready to begin walking you will try to produce the graph by walking in front of the CBR.

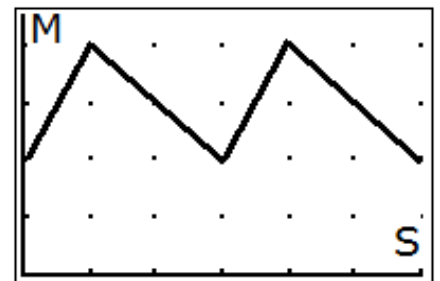


Follow up problem 1: Draw a graph that would match a student beginning at a point 2 meters from the CBR and walking at a rate of  $\frac{1}{2}$  meter per second during the first 3 seconds and then quickly reversing directions and walking at a rate of 1 meter per second for the rest of the six seconds.



Follow Up Problem 1

Follow up problem 2: Describe how a student can produce the graph at the right by walking in front of a CBR.



Follow Up Problem 2