Describe in words how you have to walk to make the sonic ranger produce the following velocity graph. What would the position graph look like?
The average velocity for the time interval 0-10 is:

A. Positive  
B. Negative  
C. Zero  
D. You can’t tell from the information given.
The total displacement for the time interval 0-10 is:

A. Positive
B. Negative
C. Zero
D. You can’t tell from the information given.
Example

- A ball rolling on a level track travels at almost a constant velocity. Assuming it takes a negligible time to get up to speed, what does the graph of its position look like as a function of time?
Please make your selection...

(1)  

(2)  

(3)  

(4)  

(5)  

(6)  

(7) other
Example

- A ball rolling on a level track travels at almost a constant velocity. Assuming it takes a negligible time to get up to speed, what does the graph of its velocity look like as a function of time?
Please make your selection...

(1) 

(2) 

(3) 

(4) 

(5) 

(6) 

(7) other
Example

A ball rolls along a horizontal track as shown. It comes to a hill and has enough speed to get over it. By thinking about its location as it goes, sketch a graph of the position of the ball as a function of time.
Please make your selection...

(1) 

(2) 

(3) 

(4) 

(5) 

(6) 

(7) other
Example

A ball rolls is rolling at a constant speed along a horizontal track as shown. It comes to a hill and has enough speed to get over it. By thinking about its speed as it goes, sketch a graph of the velocity of the ball as a function of time.
Example:
Calculating with velocity

I need to drive from A to C via B. The distance from A to B is 25 miles, from B to C is 75 miles. I have 2 hours to get from A to C, so I figure I can make it if I average 50 mi/h for the entire trip.

Going from A to B the traffic is heavy and I can only average 25 mi/h. How fast do I have to go from B to C in order to average 50 mi/h for the whole trip?

1. 58 mi/h
2. 60 mi/h
3. 75 mi/h
4. 100 mi/h
5. Something else
6. You can’t get it from the information given.

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Example: Calculating with velocity

- I need to drive from A to C via B at total distance of $\Delta L$. The distance from A to B is $\Delta L_1$, from B to C is $\Delta L_2$. I have time $\Delta t$ to get from A to C, so I figure I can make it if I average $\langle v \rangle = \Delta L/\Delta t$ for the entire trip.

- Going from A to B the traffic is heavy and I can only average a speed $v_1$. How fast do I have to go from B to C in order to average $\langle v \rangle$ for the whole trip?