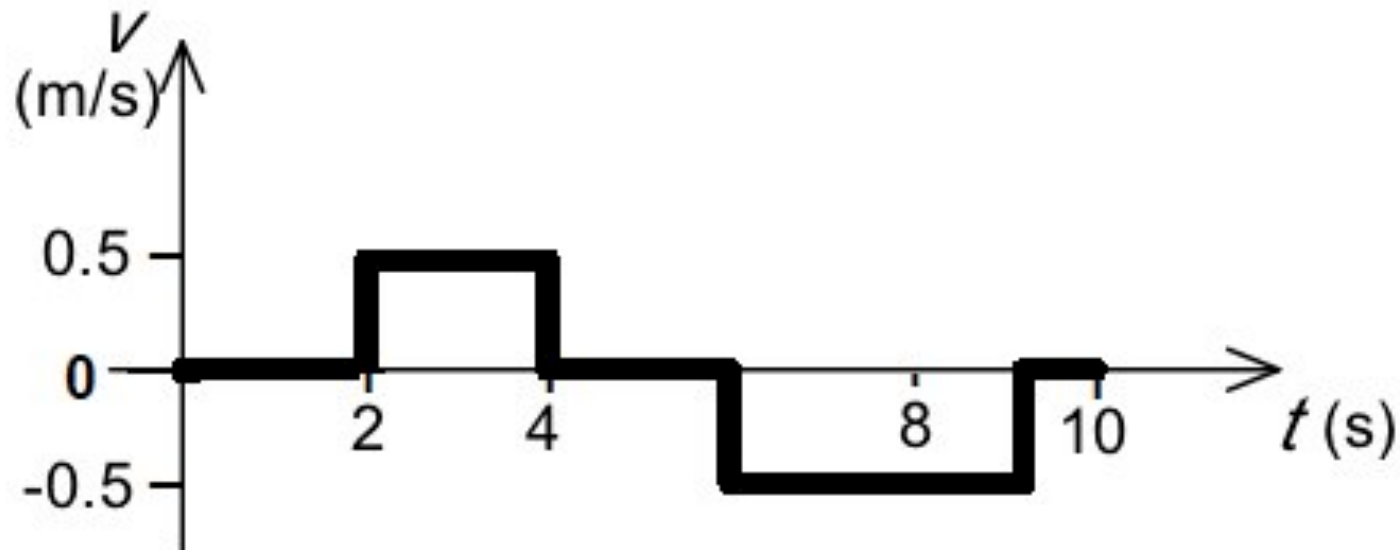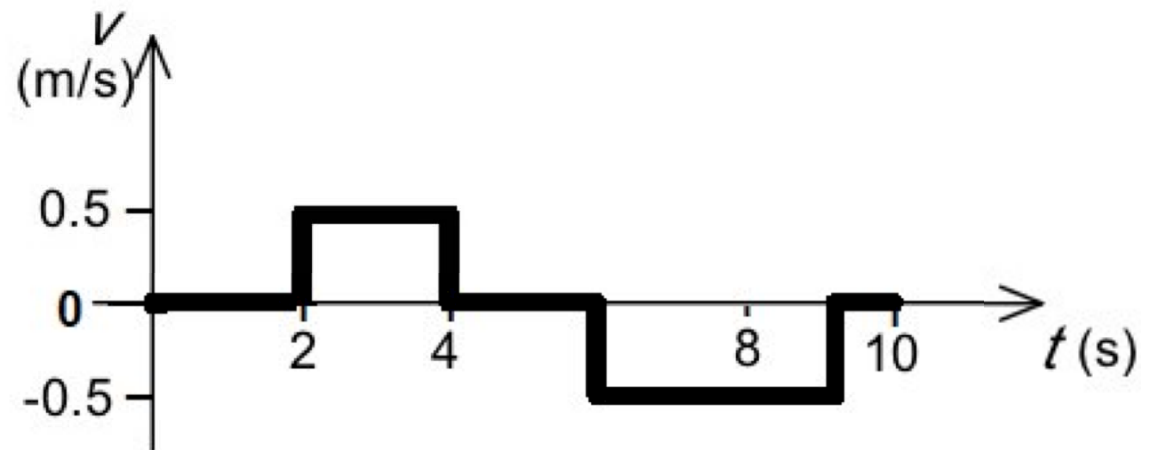Describe in words how you have to walk to make the sonic ranger produce the following velocity graph. What would the position graph look like?

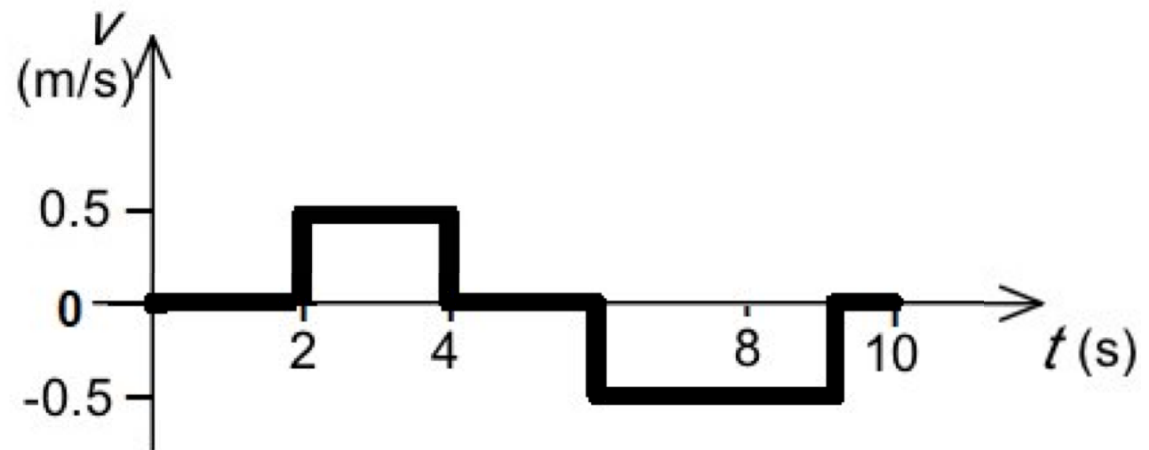# The average velocity for the time interval 0-10 is:

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
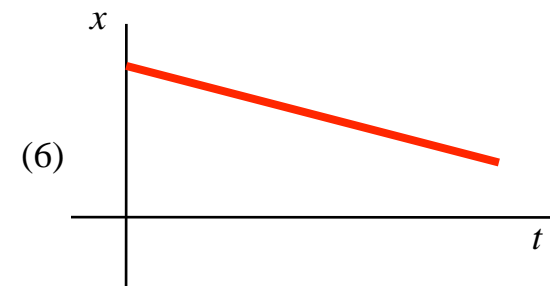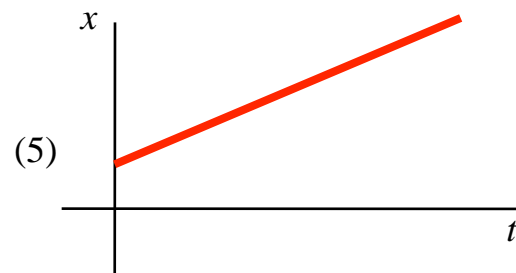
C. Zero

D. You can't tell from the information given. .

Example

x
x

- 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?

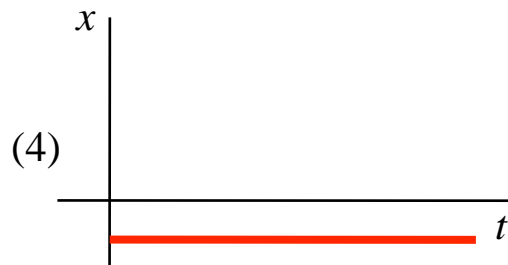# Please make your selection...

(1)

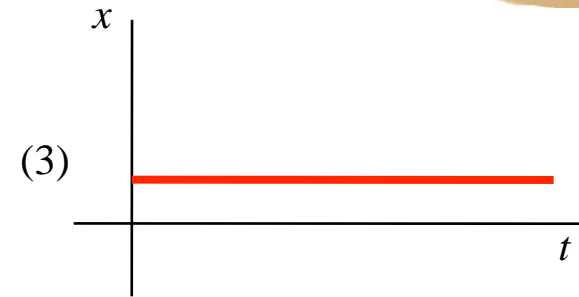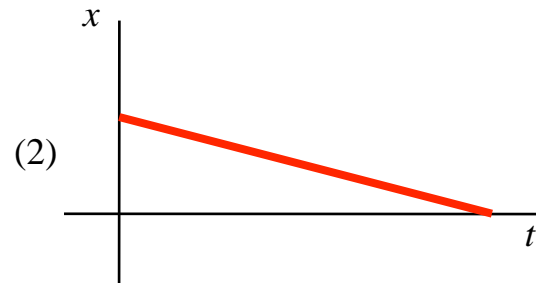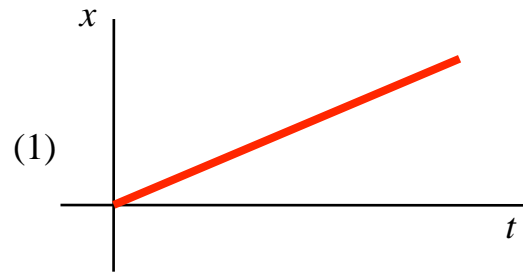(2)

(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?
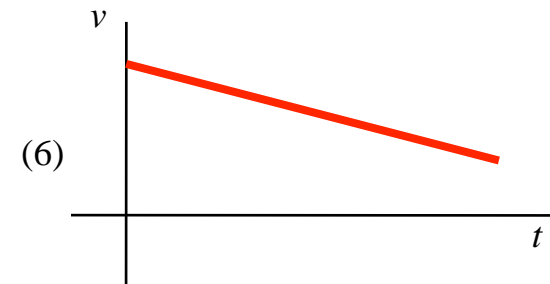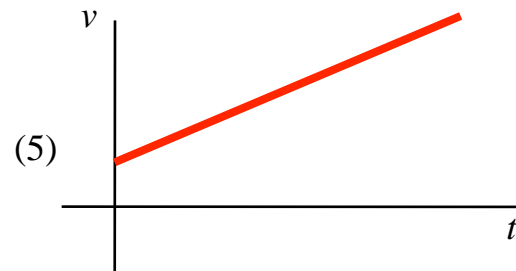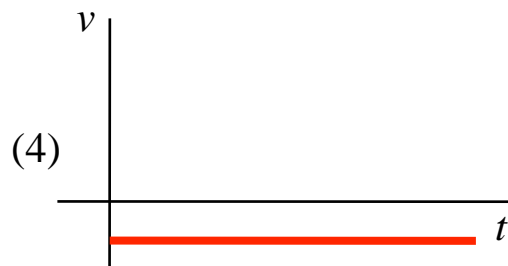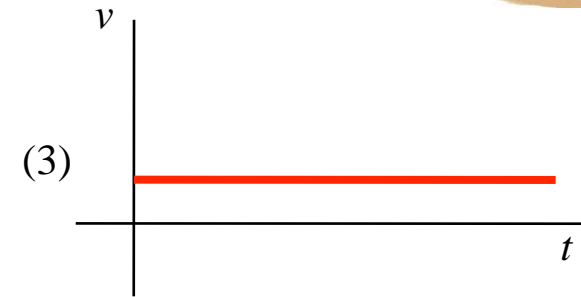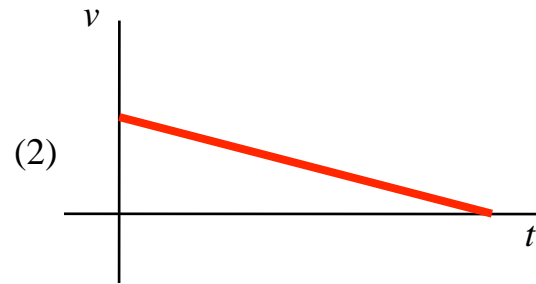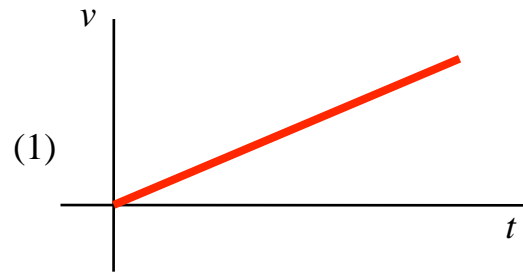
Please make your selection...

(1)

(2)

(3)

(4)

(5)

(6)

(7) other

Example

x
x

- 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 location as it goes, sketch a graph of the <u>position</u> of the ball as a function of time.

Please make your selection...

(1)

(2)

(3)

(4)

(5)

(6)
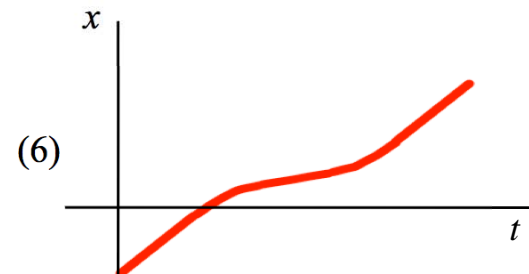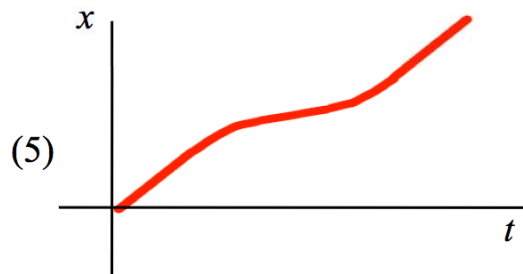
(7) other

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 <u>velocity</u> of the ball as a function of time.
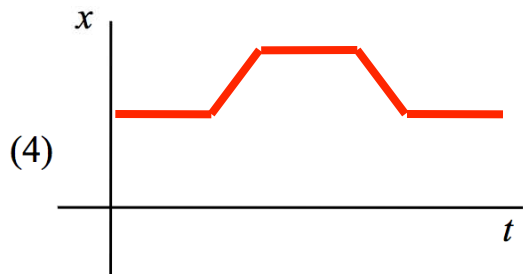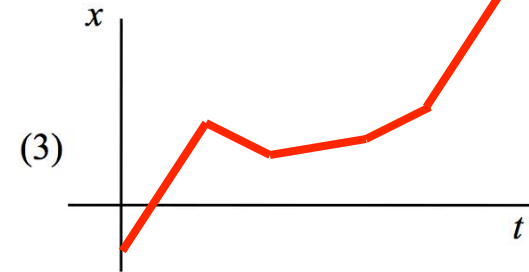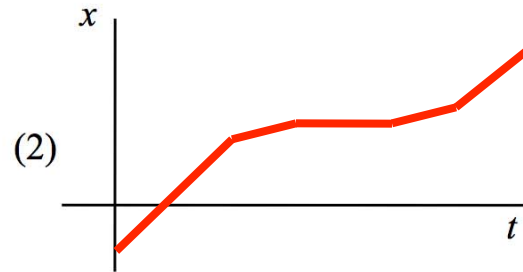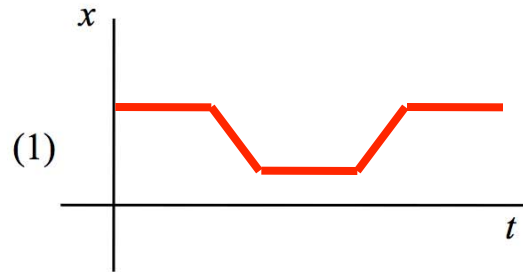
Example:
Calculating with velocity

- 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 to 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.

Example:
Calculating with velocity

- I need to drive from A to C via B at total distance of ΔL. The distance from A to B is ΔL_1, from B to C is ΔL_2. I have time Δt 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?