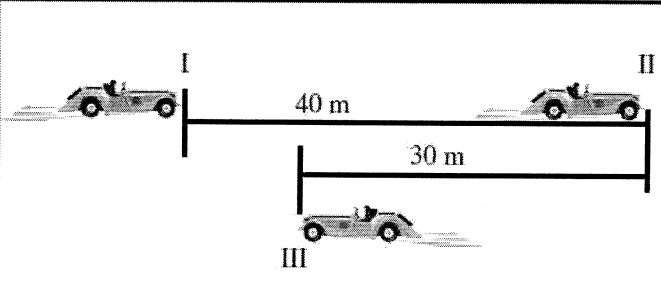
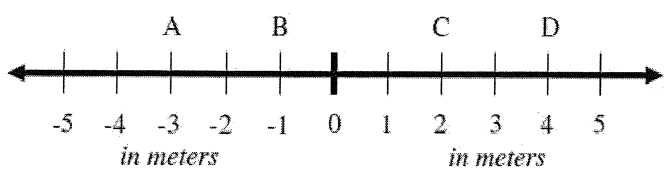


1. Use the number line at the right to answer the following questions.

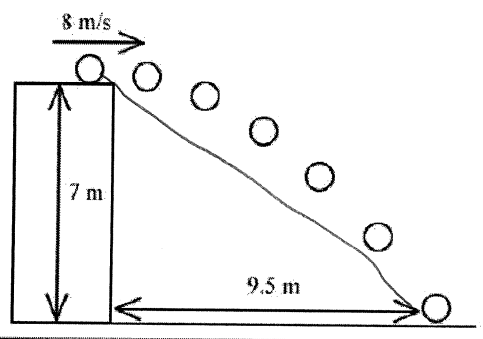
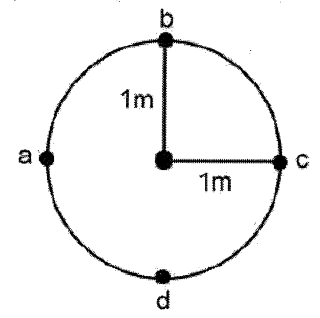
- A. What is the position of letter A? $x_A = -3m$
- B. What is the position of letter C? $x_C = 2m$
- C. What is the distance from A to C? $5m$
- D. What is the distance from D to A? $7m$
- E. What is the displacement from D to A? $-7m$



- 2. A. If II is the reference point, what is the position of the car at I? $40m$ away from II
- B. What is the total distance the car traveled? $D = 70m$
- C. What is the car's first displacement from I to II? $40m$
- D. What is the total displacement of the car from I to III: $\Delta x = 10m$

- 3. A. What is the curved distance from a to c? $3.14m$
- B. What is Δx from a to c? $2m$
- C. What is the curved distance from c to a? $3.14m$
- D. What is Δx from c to a? $-2m$
- E. What is the distance 1 time around the circle? $6.28m$
- F. What is the displacement 1 time around? $0m$

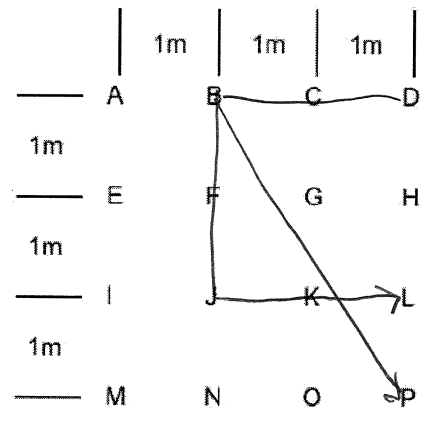
Circumference = $2\pi = 6.28m$
 $1/2$ Circum. = $\pi = 3.14m$



- 4. A ball is thrown horizontally from the top of a 7 m tall ledge.
- A. What is its vertical displacement during the fall? $\Delta y = -7m$
- B. What is its horizontal displacement? $\Delta x = 9.5m$
- C. What is the total displacement (straight line) from start to finish?
 $(-7m)^2 + (9.5m)^2 = C^2$ $C = 11.8m$
 $49 + 90.25 = C^2$ $\sqrt{139} = \sqrt{C^2}$

5. The grid at the right is 1 m between each of the horizontal and vertical rows.

- A. From D to E: $\Delta x = -3m$ $\Delta y = -1m$
- B. From A to M: $\Delta x = 0m$ $\Delta y = -3m$
- C. From B to O: $\Delta x = 1m$ $\Delta y = -3m$
- D. Draw this path: D to B to J to L:
 - i. $\Delta x = 0m$ ii. $\Delta y = 2m$ iii. $D_{total} = 6m$



- E. What is the total displacement (straight line) from B to P?
 $(2m)^2 + (-3m)^2 = C^2$
 $\sqrt{13} = \sqrt{C^2}$ $C = 3.6m$