

*These notes are prepared by
Priti Shethia - Founder of Shreeji Education.
(www.shreejiedu.in) Using different reference materials.
The purpose is to support students with learning and practice material.*

MYP - Distance/Displacement

Learning Objective - Identify the difference between displacement and distance and calculate the distance and displacement in various situations given.

ATL - Thinking skills - critically think to understand the difference between distance and displacement.

Important terms -

Distance travelled between two points - Total distance between two points

Displacement between two points - shortest distance between two points

Distance is always positive

Displacement can be positive, negative, zero

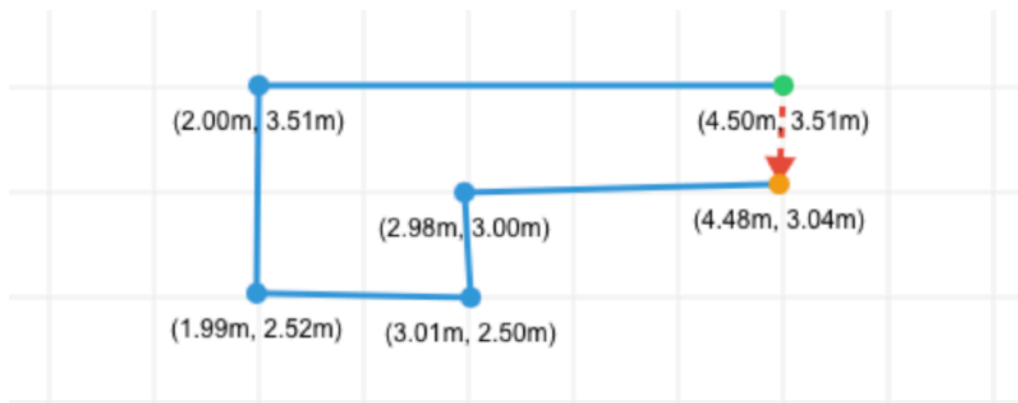
Distance is a scalar quantity (does not have direction)

Displacement is a vector quantity (have direction)

Answer the following questions based on Evaluation Criteria A

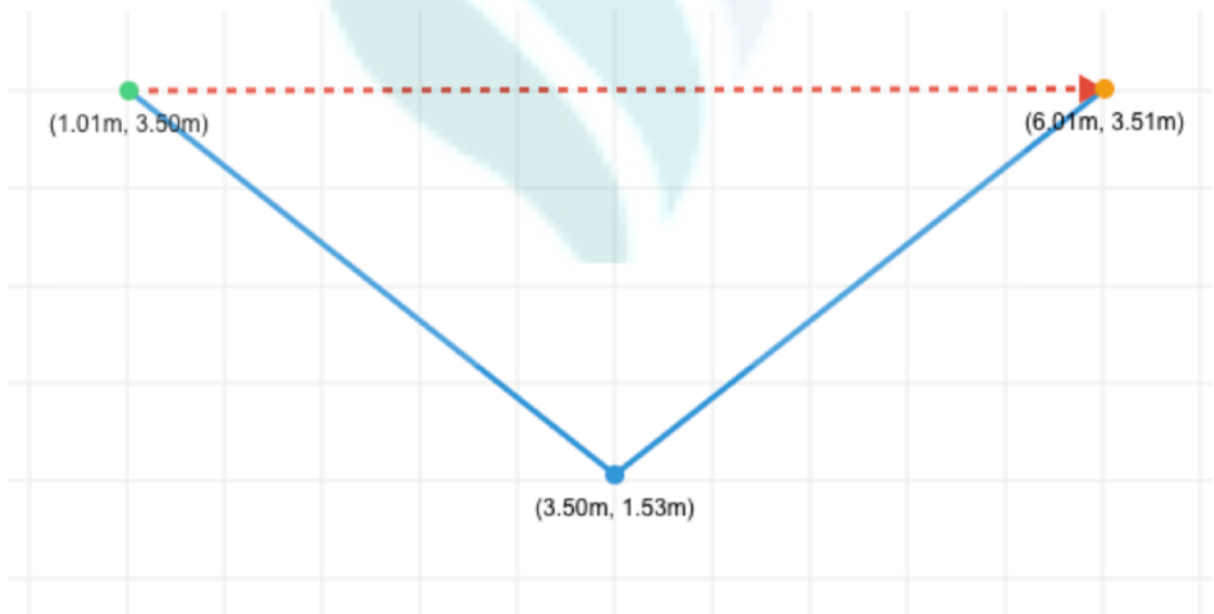
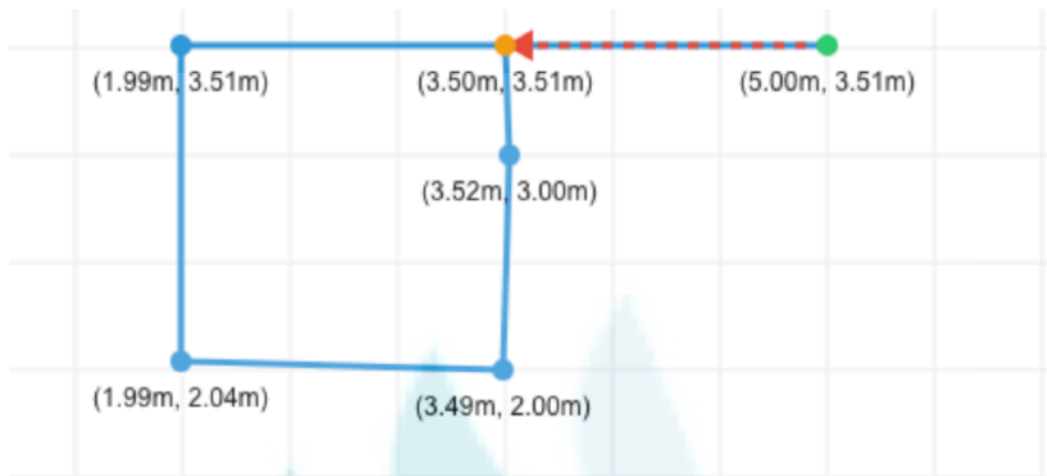
Question 1

Below diagrams are made from simulation link



<https://myphysicsclassroom.in/distance-vs-displacement-simulation/>

In below diagrams, find distance and displacement between blue dot and red dot.



Question 2

A car travels 50 km towards location A . Then goes to location B which is 30 km from A . Then comes back to original position. Calculate on the distance and displacement of the journey.

Question 3

An object moves from point A to point B which is 42 m far from A. From B it reverses its direction and travels a distance of 50 m towards A. Calculate distance and displacement.

Question 4

Describe two real life situations where you can clearly differentiate between displacement and distance.

Question 5

Explain with two examples, why distance cannot be negative but displacement can be negative.

Reference - Simulation link added below question 1