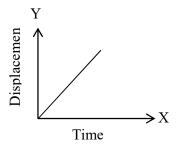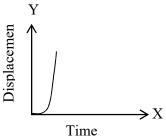# NEW STANDARD ACADEMY

SEMRI KOTHI SUPER MARKET, RAEBARELI

CLASS 9 DPP (PHYSICS)

1. The driver of a train travelling at 40ms^{-1} applies the brakes as a train enters a station. The train slows down at a rate of 2 ms^{-2} the platform is 400m long. Will the train stop in time?
2. A girl running a race accelerates at 2.5ms^{-2} for the first 4 s of the race. How far does she travel in time?
3. A train travels the first 15 km at a uniform speed of 30 kmh^{-1},the next 75 km at a uniform speed of 50 kmh^{-1}, and the last 10 km at a uniform speed of 20 kmh^{-1}, Calculate the average speed for the entire train journey.
4. Find the initial velocity of a car if it can be stopped in 10 sec by applying brakes which provide it a retardation of 2.5 ms^{-2}.
5. A bus starting from rest moves with a uniform acceleration of 0.1 ms^{-2} for 2 minutes. Find (a) the speed acquired, (b) the distance travelled.
6. A train is travelling at a speed of 90 kmh^{-1}. Brakes are applied so as to produce a uniform acceleration of -0.5 ms^{-2}. Find how far the train will go before it is brought to rest.
7. A trolley, while going down an inclined plane has an acceleration of 2 cm/s^{-2}.What will be its velocity 3s after the start?
8. A racing car has uniform acceleration of 4 ms^{-2}.What distance will it cover in 10 s after start?
9. What conclusion can you draw from the displacement- time graph of a body shown below?

10. What conclusion can you draw from the displacement- time graph of a body as shown below?

NEW STANDARD ACADEMY

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CLASS 10 DPP (PHYSICS)

the above situation and mark the position of pole, focus and center of curvature on it.

1. An object 5.0 cm in length is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 30 cm. Find the position of the image, its nature and size.
2. An object 7.0cm is placed at 27cm in front of a concave mirror of focal length 18 cm .At what distance from the mirror should a screen be placed, so that a sharp focused image can be obtained? Find the size and the nature of the image.
3. What is the minimum number of rays required for location of the image formed by a concave mirror of an object? Draw a ray diagram to show the formation of a virtual image by a concave mirror.
4. What is the principal of reversibility of light? Show that the incident ray of light is parallel to the emergent ray of light when light falls obliquely on a side of a rectangular glass slab.
5. An object 4 cm in length is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 20cm. The mirror formula to find the position, nature and size of image. Also draw a ray diagram for the above situation and mark the position of pole, focus and center of curvature on it.
6. Draw a diagram and only these conventions for calculating the focal length and nature of a spherical mirror which forms' 1/3 time magnified virtual image of an object placed 18 cm in front of it.
7. The image formed by a spherical mirror is real, inverted and is of magnification-2. If the image is at a distance of 30cm from the from the mirror. List two characteristic of the image formed if the object is moved 10 cm towards the mirror.
8. Define the radius of curvature of spherical mirror. Find the nature and focal length of a spherical mirror whose radius of curvature is +24cm.
9. Draw a ray diagram to show the formation of image of object placed between infinity and optical center of a concave lens.
10. An object 4 cm in length is placed at a distance of 20cm in front of a convex mirror of radius of curvature 20 cm the mirror formula to find the position, nature and size of image. Also draw a ray diagram for the