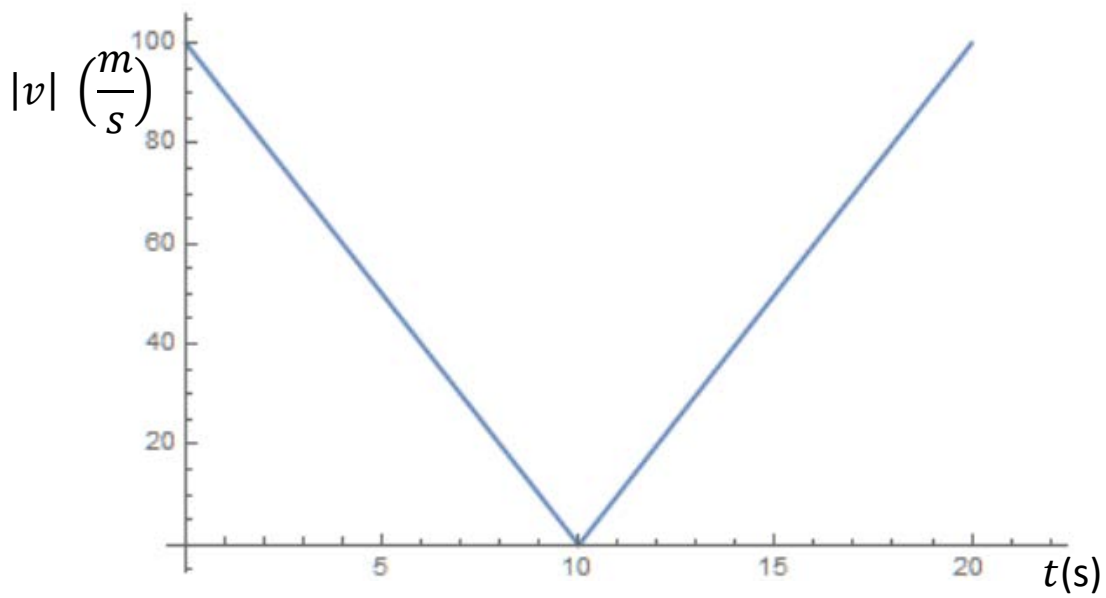
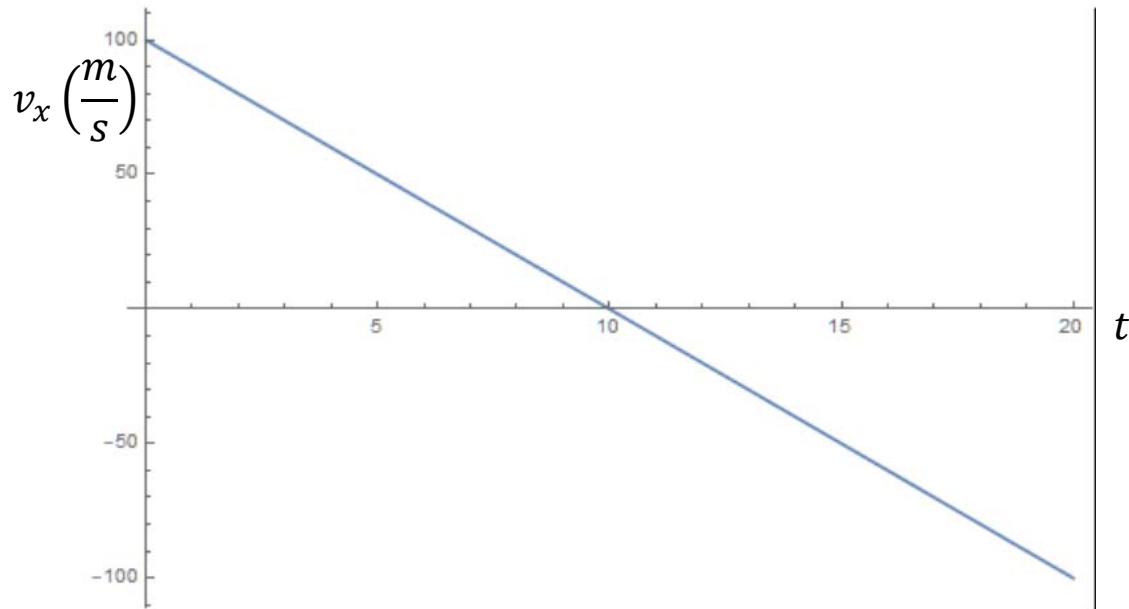


Answer on Question #68794, Physics / Mechanics

**Question:**

A ball is thrown vertically upwards with velocity of 100 m/sec. Draw velocity-time graph to represent its entire journey also find distance and displacement for whole journey using the graph and equation of motion

**Solution:**



- 1) From the graph(distance = area under graph)

$$\text{Total distance travelled: } S = S_{up} + S_{down} = 2 * S_{up} = 2 * v_0 * \frac{t_{up}}{2} = v_0 * t_{up} = 100 * 10 = 1000m$$

$$\text{Displacement: } D = S_{up} - S_{down} = 0m$$

- 2) From motion equations:

$$S_{up} = \frac{v_0^2}{2g} = \frac{100^2}{2*10} = 500m, \quad S_{total} = 2S_{up} = 1000m$$

Answer provided by <https://www.AssignmentExpert.com>