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Phy101 Physics I
Quiz2-Motion Along a Straight Line
October 08, 2026 11:00 & 13:30
Good Luck!

◇ Open Source Quiz
◇ Answer all the questions. Write the solutions explicitly and clearly. Use the physical terminology
◇ Calculator is allowed. You are not allowed to use any other electronic equipment in the exam

1. A) If a particle's position is given by $x(t) = 4 - 12t + 3t^2$, what is its velocity at $t = 1\ s$? Is it moving in the positive or negative direction of x? What is its speed at that time and is the speed increasing or decreasing?

   B) A ball is thrown upward with an initial velocity of 20 m/s. How long is the ball in the air? (Neglect the height of the release point) What is the greatest height reached by the ball? How long after release is the baU 15 m above the release point?

2. A) The position function $x(t)$ of a particle moving along an x-axis is $x(t) = 4.0 - 6.0t^2$. At what time and where does the particle (momentarily) stop? At what negative time and positive time does the particle pass through the origin?

   B) The speed of an object increases at a constant rate of 4 m/s each second. At $t = 0$, its velocity is 1 m/s and its position is $x = 7\ m$. How fast is it moving when it is at $x = 8\ m$ and what is t at that time?