MA 131 Calculus I – Spring 2008

Written Homework 2
Due by Friday, February 29, 2008 at the start of lecture.
Late homework is not accepted.

A particle is moving horizontally along a straight line. The line is marked (like a number line would be) with numerical values appropriately spaced along it.

At any time $t \geq 0$, the position of the particle on the marked line is given by $s(t) = t^4 - 13t^2 + 24$.

    a.   What is the value of $s(0)$? Explain the physical interpretation of this result.

    b.   What is the value of $s(2)$? What is the average velocity of the particle in the first two seconds? Physically, explain what this means, and how you determined it.

    c.   Find a function $v(t)$ that can be used, for $t \geq 0$, to evaluate the velocity of the particle at time t. Explain how you determined this, and why.

    d.   Are there any times when the particle is not moving? Explain.

    e.   What is the speed of the particle after 2 seconds? How did you determine this?