

## Quiz 4

Name:

ID:

1- The position of a particle moving in a straight line is given by the equation  $s(t) = t^3 + 3t^2 - 9t + 5$ . Find the distance travelled in the first 2 seconds.

2- Find the slope of the tangent line to the curve  $\tan^{-1}(\sqrt{xy}) + x^2 = \frac{\pi}{4} + 1$ , at (1,1).

3- If  $y = (\ln x)^{(\sin x)^2} e^{(e^x)}$ , find  $\frac{y'}{y}$ .

4- A cylindrical tank with radius **4 m** is being filled with water at a rate of **2 m<sup>3</sup>/min**. How fast is the height of water increasing?