

**KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS**  
**DEPARTMENT OF MATHEMATICS AND STATISTICS**  
**MATH 101 - QUIZ 3**

Name:

Student ID #:

**Question 1.** The position function of a particle moving along a line is

$$s(t) = \sin(t) - \cos(t),$$

where  $t$  is measured in seconds and  $s$  in meters.

- (1) Find the total distance travelled by the particle in the interval  $[0, \pi]$ .
- (2) Find the time when the acceleration is zero.

**Question 2.** Find the equation of the tangent line to the curve  $y^2 = \sqrt{\ln(xy)}$  at the point  $(e, 1)$ .

**Your Solution.**