**King Fahd University of Petroleum and Minerals**
**Department of Mathematics and Statistics**
**Math 260 – Term 172 – Quiz 1**

Name:
Student ID #:

**Question 1**. Find the position function of $x(t)$ of a moving particle with the acceleration function $a(t) = 4(t+3)^2$, initial position $x(0) = 1$, and initial velocity $v(0) = -1$.

**Question 2**. Find the explicit solution of the initial value problem $\dfrac{dy}{dx}\tan x = y,\ y(\frac{\pi}{2}) = \dfrac{\pi}{2}$.

**QUESTIONS 3 AND 4 ARE ON THE BACK OF THE PAGE.**

**Question 3**. Solve explicitly the differential equation $(1+x)y' + 2y = \dfrac{\sin x}{1+x}$.

**Question 4**. Solve the differential equation $\dfrac{y}{x}dx + (\ln x + 2y)dy = 0$.