King Fahd University of Petroleum and Minerals Quiz 2 Math 102-101 Duration 25 minutes

Full Name: ID:

 ${\bf Question}~{\bf 1}$  Evaluate the following integrals:

a) 
$$\int \frac{1}{(4-9x^2)^{3/2}} dx$$

b) 
$$\int \sin^{3/2}(x) \cos^3(x) dx$$
.

c)  $\int \csc^3 x \, dx$ 

**Question 2** Find all possible values of the number b such that the average value of  $f(x) = 4 + 8x - 3x^2$  on the interval [0, b] is equal to 3.