Calculus, 2016-1-ME-2

Name: **Sequence Number:**

1°). Describe **Fundamental Theorems of Calculus**.(10%)

2°). Evaluate the following Integrations: (total 80%, each 10% (×8))

a°). $\int(-2+3x^3)dx$ b°). $\int \frac{x-2}{x^2}dx$ c°). $\int(2\cos x+\sin 3x)dx$

d°). $\int_2^{-1}|1-x|dx$ e°). $\int x\sin(-x)dx$ f°). $\int \sin x\cos^2 xdx$

g°). $\int_0^{\pi/4}\tan xdx$ h°). $\int \frac{dx}{1-4x^2}$

3°). (total 10%) Evaluate the derivative

$$\frac{d}{dx}\int_{3x}^{2x}\frac{t^2}{\tan t+t}dt$$