**International Institute for
Technology and Management**

# Tutoring Sheet# 7

**Unit 05a    :    Mathematics 1**

**1.** Find the derivative of the following functions:

a. $f(x) = (2x-3)^5$

b. $f(x) = \dfrac{5-3x}{4x-1}$

c. $f(x) = \dfrac{3}{x^2+1}$

d. $f(x) = \dfrac{x^2-3x+1}{x^2+x-2}$

e. $f(x) = x^2 e^x$

f. $f(x) = (x^2-1)\ln x$

g. $f(x) = \dfrac{\ln x}{x}$

h. $f(x) = \dfrac{\sin x}{x}$

i. $f(x) = x^2 \cos x$

j. $f(x) = \sqrt{x^2+3}$

k. $f(x) = \ln(x^2+x+2)$

l. $f(x) = \dfrac{e^x+1}{e^x-1}$

m. $f(x) = \dfrac{x^2+1}{\sqrt{3x-1}}$

n. $f(x) = \ln\left(\dfrac{1+x}{1-x}\right)$

**2.** Find the derivative of $f(x) = (1+2x)e^{-x^2}$
find the value of x that makes $f'(x) = 0$

**3.** Find the derivative of $f(x) = x^2 - \ln(\sqrt{2}x)$
find the value of x that makes $f'(x) = 0$