DELHI PUBLIC SCHOOL FIROZABAD

(UNDER THE AEGIS OF DELHI PUBLIC SCHOOL SOCIETY EAST OF KAILASH NEW DELHI)

(A SENIOR SECONDARY SCHOOL)

AFFILIATED TO CBSE, AFFILIATION NO. 2133064 SCHOOL NO: 61225

REVISION FIRST TERM - 2021-22

Class : 11 Subject :MATHS

Name _____ Topic – DIFFERENTIATION

Roll No._____ DATE : 14.01.22

1. IF Y = $6x^5 - 4x^4 - 2x^3 + 5x - 9$, find dy/dx at x = -1
2. If y = sin x + tan x , find dy/ dx at x = π/3 .
3. If y =(2 – 3 cos x) / sin x , find dy/ dx at x = π/4.
4. Differentiate the following :
   1. $X^2 \sin x$
   2. $e^x \cos x$
   3. $(3x - 5)(4x^2 - 3 + e^x)$
   4. (tan x + sec x) (cot x + cosec x)
   5. $\frac{x^2+3x-1}{x+2}$
   6. $\frac{1+\sin x}{1-\sin x}$
   7. $\frac{\sec x-\tan x}{\sec x+\tan x}$
   8. $\frac{\sin x-x\cos x}{x\sin x+cosx}$
   9. $\sqrt{\frac{1+\sin x}{1-\sin x}}$
   10. $\sqrt{\frac{1+x}{1-x}}$
   11. $\sqrt{x\sin x}$
5. If y = sin 2x cos 3x , find dy/ dx .
6. Differentiate using first principle :
   1. Sin 2x
   2. $\sqrt{\tan x}$
   3. Tan $\sqrt{x}$
   4. e^x
7. If y = $\frac{\cos x-\sin x}{\cos x+\sin x}$, show that dy/dx + y^2 + 1 = 0
8. If y = sin ($\sqrt{\sin x + \cos x}$), find dy/dx.
9. If y = $\frac{e^x+e^x}{e^x-e^x}$, find dy/dx
10. Find the derivative of : $\frac{3}{\sqrt{x}} - \frac{5}{\cos x} + \frac{6}{\sin x} - \frac{2\tan x}{\sec x} + 7$
11. If y = $\frac{1-\tan x}{1+\tan x}$, show that $\frac{dy}{dx} = \frac{-2}{1+\sin 2x}$
12. Differentiate : a . $(3x + 5)^6$ b. $\sqrt{ax^2 + 2bx + c}$