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DSE/21/133
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DSE 232 Mathamatics for Computing.
Assignment -02.

a. $y = 5x^2 - 2x + 5$

$\frac{dy}{dx} = 10x - 2$

b. $y = 6\sqrt{x} - 4\cos x$

$\frac{dy}{dx} = \frac{3}{x^{\frac{1}{2}}} + 4\sin(x)$

c. $y = \frac{ax + b}{a + b}$

$\frac{dy}{dx} = 1 + \frac{a}{b}$

d. $y = 2\sin x + 5\cos x$

$\frac{dy}{dx} = 2\cos(x) - 5\sin(x)$

e. $y = (2x^2 - 4x + 5)(x + 1)$

$\frac{dy}{dx} = 6x^2 - 4x + 1$

f. $y = 6 + 4\sqrt{x}\cos(x)$

$\frac{dy}{dx} = -4x^{\frac{1}{2}}\sin(x) + 2\frac{\cos(x)}{x^{\frac{1}{2}}}$

g. $y = 7x + \sqrt[3]{x}$

$\frac{dy}{dx} = 7 + \frac{1}{2x^{\frac{1}{2}}}$

h. $y = (3 + 2\sqrt{x})^2$

$\frac{dy}{dx} = \frac{6}{x^{\frac{1}{2}}} + 4$

i $y = (x+1)(2x+3)$

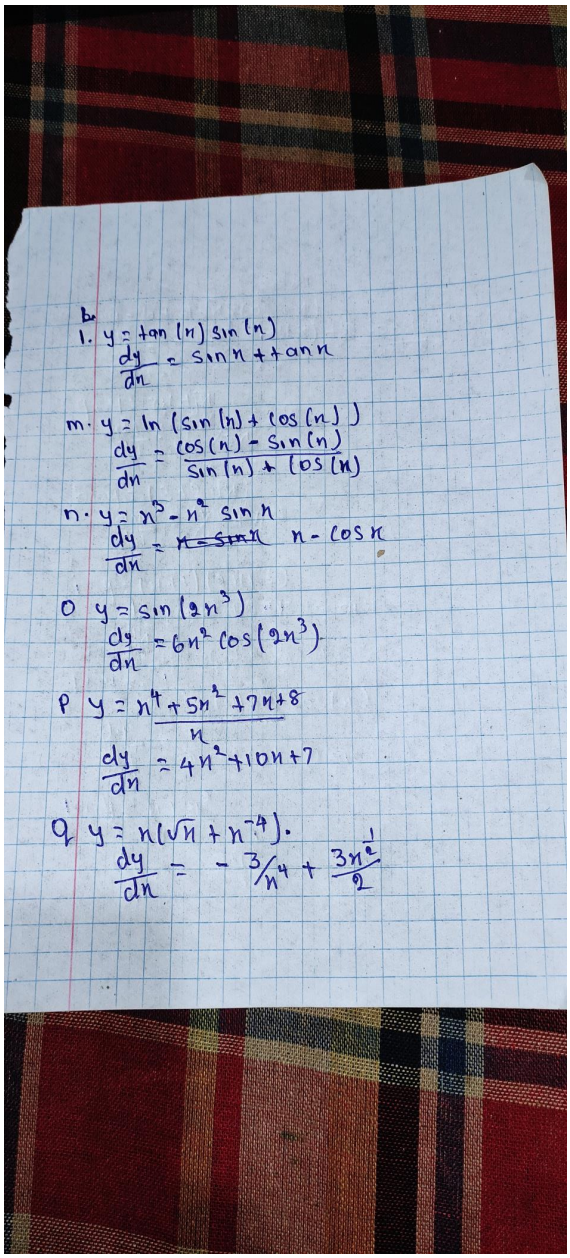
$\frac{dy}{dx} = 2x^2 + 5 * x = 4x + 5$

j. $y = \frac{1}{2\sin(x) - 2\cos(x)}$

$\frac{dy}{dx} = \frac{1}{2(\cos(x) + 2\sin(x)}$

k. $y = \frac{x + x^2}{\sqrt{x}}$

$\frac{dy}{dx} = \frac{3x^{\frac{1}{2}}}{2} + \frac{1}{2x^{1/2}}$



b.

l. $y = \tan(x)\sin(x)$

$\frac{dy}{dx} = \sin x + \tan x$

m. $y = \ln(\sin(x) + \cos(x))$

$\frac{dy}{dx} = \frac{\cos(x) - \sin(x)}{\sin(x) + \cos(x)}$

n. $y = x^3 - x^2 \sin x$

$\frac{dy}{dx} = \cancel{x - \sin x}\ x - \cos x$

o $y = \sin(2x^3)$

$\frac{dy}{dx} = 6x^2 \cos(2x^3)$

p $y = \frac{x^4 + 5x^2 + 7x + 8}{x}$

$\frac{dy}{dx} = 4x^2 + 10x + 7$

q $y = x(\sqrt{x} + x^{-4})$.

$\frac{dy}{dx} = -\frac{3}{x^4} + \frac{3x^{\frac{1}{2}}}{2}$

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q $y = x(\sqrt{x} + x^{-4})$.

$\frac{dy}{dx} = -3/x^4 + \frac{3x^{\frac{1}{2}}}{2}$

r. $y = \frac{4}{x} - \frac{1}{6x^3} + \frac{8}{x^5}$

$\frac{dy}{dx} = -\frac{4}{x^2} + \frac{1}{2x^4} - \frac{40}{x^6}$

s. $y = \frac{4x^3\sqrt{x^5}}{4\sqrt{x}}$

$\frac{dy}{dx} = 5x^4$

THANK YOU ---