



Mi Universidad

Mapa conceptual

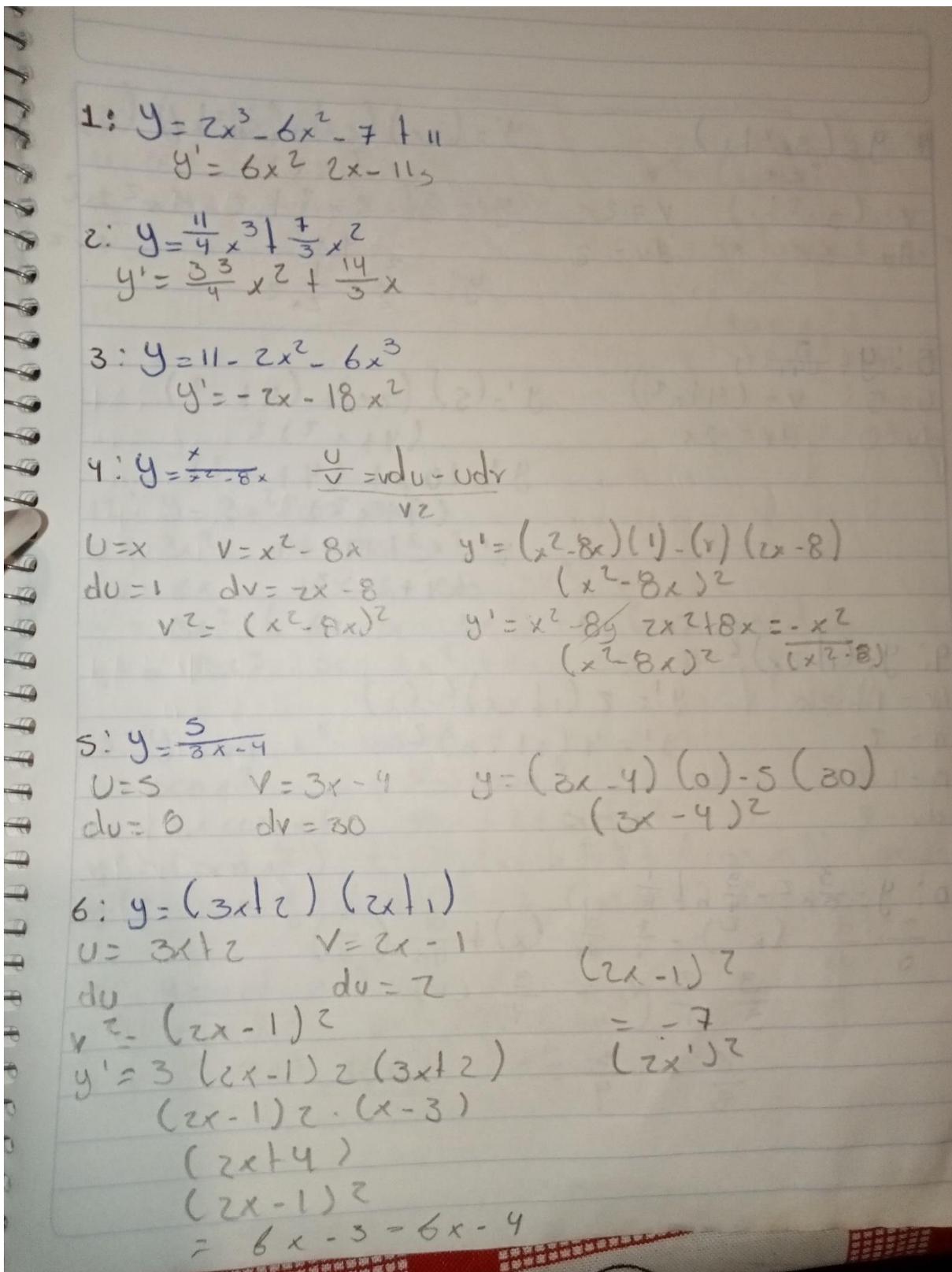
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Nombre del tema: cuestionario

Nombre de la Materia: calculo

Nombre del profesor: Juan José Ojeda

Cuatrimestre: 3



$$7: y = \frac{(3x^2 + 1)}{2x} \quad y' = \frac{(2x)(6x) - (3x^2 + 1)(2)}{(2x)^2}$$

$$v = (3x^2 + 1) \quad v' = 2x \quad y' = \frac{2^2 - 6x^2 + 2}{4x^2} = \frac{-6x^2 + 4}{4x^2}$$

$$du = 6x \quad du = 2 \quad y' = \frac{3}{2} - \frac{1}{2x^2}$$

$$8: y = \frac{5}{(4+x^2)} \quad y' = \frac{(5)(2x) - (4+x^2)(0)}{(4+x^2)^2}$$

$$u = 5 \quad v = (4+x^2) \quad y' = \frac{10x - 0}{(4+x^2)^2} = \frac{10x}{(4+x^2)^2}$$

$$du = 0 \quad dv = 2x \quad y' = \frac{x^2 + 10x - 4}{(4+x^2)^2}$$

$$9: y = (1+2x)^2 \quad y' = 2(1+2x)^1 \cdot (2)$$

$$v = 1+2x \quad y' = 4(1+2x)^1$$

$$n = 2 \quad y' = 4(1+2x)$$

$$n = 1 - 1 = 0$$

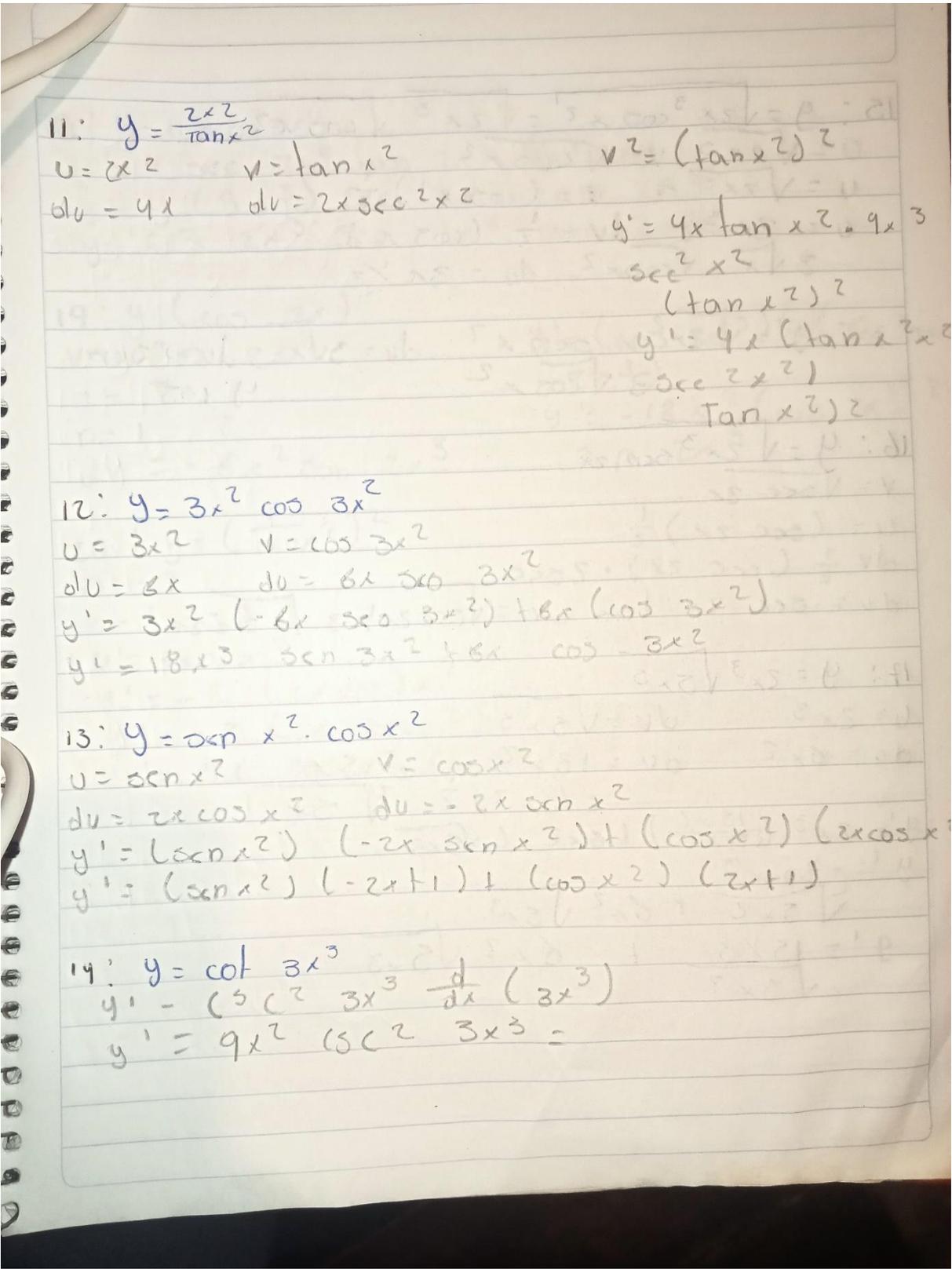
$$dv = 2$$

$$10: y = \frac{3}{5}x^2 - \frac{3}{4}x + \frac{1}{8}$$

$$\frac{3}{5} \frac{d}{dx} (x^2) - \frac{3}{4} \frac{d}{dx} (x) + \frac{d}{dx} \left(\frac{1}{8}\right)^0$$

$$\frac{3}{5} \cdot \frac{2}{1} x - \frac{3}{4} (1)$$

$$\frac{6}{5}x - \frac{3}{4} =$$



11: $y = \frac{2x^2}{\tan x^2}$
 $u = 2x^2$ $v = \tan x^2$ $v^2 = (\tan x^2)^2$
 $du = 4x$ $dv = 2 \sec^2 x^2$
 $y' = 4x \tan x^2 \cdot 4x^3 \sec^2 x^2$
 $y' = 4x (\tan x^2)^2 \sec^2 x^2$

12: $y = 3x^2 \cos 3x^2$
 $u = 3x^2$ $v = \cos 3x^2$
 $du = 6x$ $dv = -6x \sin 3x^2$
 $y' = 3x^2 (-6x \sin 3x^2) + 6x (\cos 3x^2)$
 $y' = 18x^3 \sin 3x^2 + 6x \cos 3x^2$

13: $y = \sec x^2 \cdot \cos x^2$
 $u = \sec x^2$ $v = \cos x^2$
 $du = 2x \cos x^2$ $dv = -2x \sin x^2$
 $y' = (\sec x^2) (-2x \sin x^2) + (\cos x^2) (2x \cos x^2)$
 $y' = (\sec x^2) (-2x \tan x^2) + (\cos x^2) (2x \sec^2 x^2)$

14: $y = \cot 3x^3$
 $y' = -\csc^2 3x^3 \cdot \frac{d}{dx} (3x^3)$
 $y' = -9x^2 \csc^2 3x^3$

$$15: y = \sqrt{2x^3 \cos x^2} = \sqrt{2x^3} \sqrt{\cos x^2}$$

$$u = \sqrt{2x^3} \quad v = \sqrt{\cos x^2}$$

$$u = \sqrt{2x^3} \Rightarrow v = (\cos x^2)^{\frac{1}{2}}$$

$$u = 2x^{\frac{3}{2}} \quad dv = \frac{1}{2} (\cos x^2)$$

$$3\sqrt{x} \quad \sqrt{\cos x^2} \quad du = 3x^{\frac{1}{2}}$$

$$y' = \frac{\sqrt{2x^2} \cdot \sec x^2}{3\sqrt{\cos x^2}} \quad du = 3\sqrt{x} \quad du = x \sec$$

$$y \cos$$

$$16: y = \sqrt{2x^3 \sec 2x}$$

$$v = \sqrt{\sec 2x}$$

$$u = (\sec 2x)^{\frac{1}{2}}$$

$$dv = \frac{1}{2} (\sec 2x) \cdot 2 \sec$$

$$dv = \sec 2x \cdot \tan 2x = \sqrt{\sec 2x} \cdot 3\sqrt{x} \sec 2x$$

$$17: y = 2x^3 \sqrt{5x^3}$$

$$u = 2x^3 \quad dv = \sqrt{5x^3}$$

$$du = 6x^2 \quad dv = \frac{1}{2} \sqrt{5x^3} = \frac{15x}{2\sqrt{5x^3}}$$

$$y' = 2x^3 \left(\frac{15x^2}{2\sqrt{5x^3}} \right) + 6x^2 (\sqrt{5x^3})$$

$$y' = \frac{30x^3}{2\sqrt{5x^3}} + 6x^2 \sqrt{5x^3}$$

$$y' = \frac{15x^3}{\sqrt{5x^3}} + 6x^2 \sqrt{5x^3}$$

$$18: y = 4 \sec 2x^4$$

$$y' = 4 \sec 2x^4 \tan 2x^4 \frac{d}{dx}(2x^4)$$

$$y' = y (8x^3) \sec 2x^4 \tan 2x^4$$

$$y' = 32x^3 \sec 2x^4 \tan 2x^4$$

$$19: y = (\cos 2x)^3$$

$$v = \cos 2x^3$$

$$n = 3$$

$$n - 1 = 2$$

$$dv = -6x^2 \sin 2x^3$$

$$y' = (\cos 2x^3)^2 (-6x^2 \sin 2x^3)$$

$$y' = -18x^2 (\cos 2x^3)^2 \sin 2x^3$$

$$20: y = \left(\frac{1}{\sec x^2}\right)^2$$

$$n = -2$$

$$n - 1 = -3$$

$$u = \sec x^2$$

$$y' = -2 (2x \cos x^2) x^2$$

$$y' = -2 (2x \cos x^2) (\sec x^2)^3$$

$$y' = -4x \cos x^2 (\sec x^2)^3$$

