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## Formulario

1 $Y = 2x^3 - 6x^2 + 7 + 11$

$\boxed{6x^2 - 12x - 7}$

2 $Y = 11/4x^4 + 7/3x^3$

$Y' = \frac{77}{4}x^3 + \frac{14}{3}x$

3 $Y = 11 - 2x^2 - 6x^3$

$-4x^2 - 18x^2$

4 $Y = x/(x^2 - 8x)$

$u = x \quad v = x^2 - 8x \quad Y' = du/v \quad v^2$

$du = 1 \quad dv = 2x - 8$

$v = (x^2 - 8x)^2$

$Y' = \frac{(x^2 - 8x)(1) - (x)(2x - 8)}{(x^2 - 8x)^2}$

$Y' = \frac{x^2 - 8x - 2x^2 + 8x}{(x^2 - 8x)^2}$

$\boxed{= \frac{-x^2}{(x^2 - 8x)^2}}$

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

$v = 3x - 4$

$dv = 3$

$Y' = \frac{(3x-4)(0) - 5(3)}{(3x-4)^2}$

$\boxed{Y' = \frac{-15}{(3x-4)^2}}$

6 $Y = (3x+2)/(2x-1)$

$u = 3x + 2$

$du =$

$v = (3x-1)^2$

$= \frac{-7}{(3x-1)^2}$

7 $\frac{(3x^2+1)}{x^2}$ $Y = \frac{(3x^2+1)}{2x} = (2x)(6x) - \frac{(3x^2+1)}{x^2}(2)$

$= 12x^3 - 6x^2 + 2 = \frac{6x^2 - 2}{4x^2}$

$= 3/x = \boxed{3x^{-1}}$

8 $Y = 5/(4 + x^2)$

$u = 5 \quad v(4+x^2) \quad Y' = (5)(2x)/4x^2$

$du = 0 \quad dv = 2x$

$\boxed{Y' = \frac{-10x}{(4+x^2)^2}}$

9 $Y = (1+2x)^2$

$v = 1 + 2x \quad Y' = 2(1+2x)^2 \cdot (2)$

$n = 2$

$n-1 = 1 \quad \boxed{Y' = 4(1+2x)^2 =}$

$dv = 2$

10 $Y = \sqrt{2x^3 \cos x^2}$ $\sqrt{ab} = \sqrt{A} \cdot \sqrt{B}$

$\sqrt{Y} = 2x^3 \cos x^2 = \sqrt{2x^3} \cdot \sqrt{\cos x^2}$

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

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

$du = 3\sqrt{x} \quad Y = \sqrt{2x^3} \cdot \sqrt{\cos x^2}$

$\boxed{Y' = \sqrt{2x^3} \cdot \frac{\sqrt{\cos x^2}}{\sqrt{\cos x^2}} + \frac{3\sqrt{x}}{\sqrt{\cos x^2}}}$

16 $Y = \sqrt{2x^3 \sec 2x} \quad v = \sqrt{\sec 2x}$

$v = (\sec 2x)^{1/2}$

$u = \sqrt{2x^3} \quad dv = \frac{1}{2}(\sec 2x)^{-1/2} \cdot 2 \sec 2x \tan$

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

$Y = 3\sqrt{x} \sec 2x \tan$

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

$\boxed{Y = 3\sqrt{x} \cdot \frac{\sqrt{\sec 2x} \cdot \tan 2x}{\sqrt{\sec 2x}} + 3\sqrt{x \sec 2x}}$

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

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

$du = 6x^2 \quad dv = 15x^2$

$2(5x^2)^{-1/2} = \frac{15x^2}{2\sqrt{5}}$

$\boxed{Y' = \frac{30x^4}{2\sqrt{5x^2}} + 6x^2\sqrt{5x^2}}$

18 $4 \sec x^4$

$Y' = 4 \sec 2x^4$

$Y' = 4 \cdot 8x^3 \sec 2x^4 \tan 2x^4 \cdot \frac{d}{dx}(2x^4$

$\boxed{Y = 32x^3 \sec x^4 \cdot TAN 2x^4}$

19 $(\cos 2x^3)^3$

$V = \cos 2x^3 \quad Y' = 3(\cos 2x^3)^2 \cdot (-6x^2 \operatorname{sen} 2x^3$

$n = 3$

$n-1 = 2 \quad \boxed{Y = -18x^2 (\cos x^3)^2 \operatorname{sen} x^3}$

$dv = 6x^2 \operatorname{sen} 2x^3$

20 $1/(\operatorname{sen} x^2)^2$

$Y = (\operatorname{sen} x^2)^{-2} \quad d \quad n = -2$

$U^n \quad n-1 = -3$

$Y' = -2(\operatorname{sen} x^2)^{-3} \quad U = \operatorname{sen} x^2$

$du = \cos x^2$

$Y' = \frac{-2(\cos x^2)}{(\operatorname{sen} x^2)^3} \quad Y' = \frac{4x \cos x^2}{(\operatorname{sen} x^2)^3}$