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UNIVERSIDAD DELSURESTE

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MATERIA:  
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FECHA ENTREGA:  
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$$1 - f(x) = 3x^2 - 5 + 5$$

$$f'(x) = 6x - 1$$

$$2 - g(t) = 1 - 3t^2 - 2t^4$$

$$g'(t) = -6t - 8t^3$$

$$3 - f(x) = (2x+3)(3x-2)$$

$$f'(x) = (2)(3x-2) + (2x+3)(3)$$

$$4 - g(x) = (2x^2-1)(3x+2)$$

$$g'(x) = (4x)(3x+2) + (2x^2-1)(3x^2)$$

$$5 - h(x) = (x+1)^{3-1}$$

$$h'(x) = 3(x+1)^2 \cdot (1)$$

$$h'(x) = 3(x+1)^2$$

$$6 - g(t) = (4t-7)^{2-1}$$

$$g'(t) = 2(4t-7)(4)$$

$$g'(t) = 8(4t-7) \cdot (4)$$

$$g'(t) = 8(4t-7) \cdot (4)$$

$$7 - f(v) = v(2v-1)(2v+1)$$

$$f'(v) = (2v^2-1)(2v+1)$$

$$f'(v) = (4v-1)(2v^2+1) + (2v^2-1)(4v-1)$$

$$8 - f(x) = 4x^4 \frac{1}{x^2} \frac{v}{v}$$

$$f'(x) = 16x^3 - \frac{0(x^2) - 1(2x)}{(x^2)^2}$$

$$f'(x) = 16x^3 + \frac{2v}{x^4}$$

$$f'(x) = 16x^3 - \frac{2v}{x^4}$$

$$10 = \frac{1}{x+1} - \frac{1}{x-1}$$

$$g'(x) = 0(x+1) - 1(1+0) - 0(x-1) - 1(1+0)$$

$$g'(x) = \frac{-1}{(x-1)^2} + \frac{1}{(x)^2}$$

$$11 - h(x) = \frac{3}{x^2+x+1}$$

$$h'(x) = \frac{0(x^2+x+1) - (3)(2x+1+0)}{(x^2+x+1)^2}$$

$$h'(x) = \frac{(-3)(2x+1)}{(x^2+x+1)^2}$$

$$12 = f(x) = \frac{1}{1 - \frac{2}{x}}$$

$$\frac{u}{v} = \frac{u'v - uv'}{v^2}$$

$$f'(x) = \frac{0(1 - \frac{2}{x}) - [0 - \frac{(0)(x) - (2)(1)}{(x)^2}]}{(1 - \frac{2}{x})^2}$$

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

$$13 = g(t) = (t^2+1)(t^3+t^2+1)$$

$$g'(t) = (2t+0)(t^3+t^2+1) + (t^2+1)(3t^2+2t+0)$$

$$v' = 3t^2 + 2t + 0$$

$$u = t^2 + 1 \quad u' = 2t + 0$$



$$14 = f(x) = (2x^3 - 3)(17x^4 - 6x + 2)$$

$$UV = U'V + UV'$$

$$f'(x) = (6x^2)(17x^4 - 6x + 2) + (2x^3 - 3)(68x^3 - 6)$$

$$15 = g(z) = \frac{16}{2z} - \frac{1}{32z^2}$$

$$\frac{g}{z} = \frac{U'V - UV'}{V^2}$$

$$g'(z) = \frac{-2}{(32z)^2} - \frac{1}{(32z)^2} - \frac{0}{z}$$

$$g'(z) = \frac{-0(32z^2) - (1)(62)}{(32z^2)^2} = \frac{-62}{32^2}$$

$$g'(z) = \frac{-2}{(32z)^2}$$

$$16 = f(x) = \frac{2x^3 - 3x^2 + 4x - 5}{x^2}$$

$$\frac{f}{x} = \frac{U'V - UV'}{V^2}$$

$$U = (2x^3 - 3x^2 + 4x - 5)$$

$$U' = (6x^2 - 6x + 4)$$

$$V = (x^2)$$

$$V' = (2x)$$

$$f'(x) = \frac{(6x^2 - 6x + 4)(x^2) - (2x^3 - 3x^2 + 4x - 5)(2x)}{(x^2)^2}$$

$$17 = g(y) = 2y(3y^2 - 2)(y^2 + 2y + 3)$$

$$g'(y) = 2y(3y^2 - 2)(2y + 2) + (3y^2 - 2)(2y^2 + 4y + 6) - 2y(6y^2 - 2)$$

$$g'(y) = (3y^4 + 6y^3 + 8y^2 - 2y - 3)$$

$$18 - f(x) = \frac{x^2 - 4}{x^2 + 4}$$

$$\frac{u \cdot v' - u'v}{v^2} \quad (x^2 - 4) \cdot (x^2 + 4) = x^4 - 16$$

$$f'(x) = \frac{(2x - 0)(x^2 + 4) - (x^2 - 4)(2x + 0)}{(x^2 + 4)^2}$$

$$19 - g(t) = \frac{t-1}{t^2 + 2t + 1}$$

$$g'(t) = \frac{(1)(t^2 + 2t + 1) - (t-1)(2t + 2)}{(t^2 + 2t + 1)^2}$$

$$g'(t) = \frac{(t^2 + 2t + 1) - (2t + 2t - 2)}{(t^2 + 2t + 1)^2}$$

$$20 - u(x) = \frac{1}{(x+2)^2}$$

$$2 - x^2 + 5x - 5x = (x)^2 = x^2$$

$$u'(x) = \frac{(0)(x+2)^2 - (1)(2)(x+2)(1+0)}{(x+2)^4}$$

$$21 - v(t) = \frac{1}{(t-1)^3} = (t-1)^{-3}$$

$$v'(t) = 3(t-1)^{-4} (t-0)$$

$$v'(t) = -3(t-1)^{-4} \cdot (t)$$

$$22 - h(x) = \frac{2x^3 + x^2 - 3x + 17}{2x-5}$$

$$\frac{u \cdot v' - u'v}{v^2} \quad (2x^3 + x^2 - 3x + 17) \cdot (2) - (2x-5) \cdot (6x^2 + 2x - 3)$$

$$h'(x) = \frac{(6x^2 + 2x - 3 + 0)(2x - 5) - (2x^3 + x^2 - 3x + 17)(2)}{(2x - 5)^2}$$

$$23 = g(x) = \frac{3x}{x^3 + 7x - 5} \cdot \frac{v}{v} \quad \frac{v}{v} = \frac{v'v - uv'}{v^2}$$

$$g'(x) = \frac{(3)(x^3 + 7x - 5) - (3x)(3x^2 + 7 - 0)}{(x^3 + 7x - 5)^2}$$

$$24 = f(t) = \frac{1}{\left(t + \frac{1}{t}\right)^2} = \left(t + \frac{1}{t}\right)^{-2}$$

$$f'(t) = -2 \left(t + \frac{1}{t}\right)^{-3} \cdot \left(1 + \frac{1}{t^2}\right)$$

$$25 = g(x) = \frac{1}{x} - \frac{2}{x^2} = \frac{x^2 - 2x}{x^3} = 2x^{-1} \cdot \frac{2x^1 - 3x^2}{x^3}$$