

Lista 3 – Mat. Administração e Contabilidade

April 17, 2016

1. a)

b) $f^{-1}(x) = \frac{x^2 - 2}{5}, x > 0$

c) $f^{-1}(x) = e^x - 3$

d) $f^{-1}(x) = \ln \frac{y - 1}{y + 1}$

2. a) $f^{-1}(x) = \frac{1 - y}{3}$

b) $f^{-1}(x) = \sqrt{y - 1}, x > 0$ $f^{-1}(x) = -\sqrt{y - 1}, x < 0$

c) $f^{-1}(x) = \frac{y - 1}{y}$

d) $f^{-1}(x) = 1 + \sqrt{x + 1}, x > 1$ $f^{-1}(x) = 1 + \sqrt{x + 1}, x < 1$

e)

f) $f^{-1}(x) = \frac{\log_{10}(x) + 3}{2}$

g) $f^{-1}(x) = \log_2 \frac{y}{1 - y}$

h)

i) $f^{-1}(x) = \frac{1}{2} \log_{10} \frac{y}{2 - y}$

j) $f^{-1}(x) = \frac{1 + \operatorname{arcsen} \frac{y-1}{2}}{1 - \operatorname{arcsen} \frac{y-1}{2}}$

3. a)

4. a) $= 2^3 - 2 \cdot 2^2 + 3 \cdots 2 - 4 = \dots$

b) $= \frac{3^2 - 5}{2 \cdot 3^3 + 1} = \dots$

c) $= \lim_{s \rightarrow 1} (s^2 + s + 1) = \dots$

d) $= \lim_{x \rightarrow 4} \frac{(x - 4)(3x - 5)}{(x - 4)(4x - 9)} = \frac{3 \cdot 4 - 5}{4 \cdot -9} = \dots$

$$e) = \lim_{x \rightarrow -3} \frac{(x+3)(x+2)}{(x+3)(x-4)} = \frac{-3+2}{-3-4} = \dots$$

$$f) = \lim_{x \rightarrow 0} \frac{x+2-2}{x(\sqrt{x+2}+\sqrt{2})} = \frac{1}{2\sqrt{2}}.$$

$$g) = \lim_{y \rightarrow -2} (y^2 - 2y + 4) = \dots$$

$$h) = \lim_{x \rightarrow 3} \frac{(x-3)(2x^2+x+1)}{(x-3)(4x^2-x+1)} = \frac{2 \cdot 9 + 3 + 1}{4 \cdot 9 - 3 + 1} = \dots$$

$$i) = \lim_{h \rightarrow 0} \frac{h+1-1}{h(\sqrt[3]{(h+1)^2} + \sqrt[3]{h+1} + 1)} = \frac{1}{3}$$

$$j) = \lim_{x \rightarrow 1} \frac{\sqrt{2-x}}{x+1} = \frac{1}{2}$$

$$k) \lim_{x \rightarrow 1^-} = \infty, \lim_{x \rightarrow 1^+} = -\infty, \text{ assim } \lim_{x \rightarrow 1} \text{ não existe;}$$

$$l) = \lim_{x \rightarrow -2} \frac{x(x+2)(x+3)}{(x+2)(x-3)} = \frac{-2(-2+3)}{-2-3} = \dots$$

$$m) = \lim_{x \rightarrow 1} \frac{(x-1)(x+2)}{(1-x)(x^2+x+1)} = \frac{-(1+2)}{1+1+1} = \dots$$

$$n) \infty;$$

$$o) \text{ não existe;}$$

$$p) = \lim_{x \rightarrow 1} \frac{(x-1)(x^{m-1} + \dots + x + 1)}{(x-1)(x^{n-1} + \dots + x + 1)} = \frac{m}{n} =$$

$$5. a) = \lim_{x \rightarrow 0} \frac{x+9-9}{x(\sqrt{x+9}+3)} = \frac{1}{6}.$$

$$6. a) 7.$$

$$7. a) 0.$$

$$8. a) 0, 2, \text{ não existe.}$$

$$b) 1, 0, \text{ não existe.}$$

$$c) 4, 4, 4.$$

$$d) 0, 12, \text{ não existe.}$$