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$$D\left[\underbrace{(x-1)\cdot e^x}\ \underbrace{\operatorname{sen} x}+\underbrace{x\,e^x}\ \underbrace{\cos x}\right]=$$

$$=D\left[(x-1)e^x\right]\operatorname{sen}x+(x-1)e^xD(\operatorname{sen}x)+D(xe^x)\cos x+$$

$$+xe^xD(\cos x)=$$

$$=\left[D(x-1)e^x+(x-1)D(e^x)\right]\operatorname{sen}x+(x-1)e^x\cos x+\left[D(x)e^x+\right.$$

$$\left.xD(e^x)\right]\cos x+xe^x(-\operatorname{sen}x)=$$

$$=\left[e^x+(x-1)e^x\right]\operatorname{sen}x+(x-1)e^x\cos x+\left[e^x+xe^x\right]\cos x-$$

$$-xe^x\operatorname{sen}x=$$

$$=e^x\operatorname{sen}x+xe^x\operatorname{sen}x-e^x\operatorname{sen}x+xe^x\cos x-e^x\cos x+e^x\cos x+xe^x\cos x-$$

$$-xe^x\operatorname{sen}x=2xe^x\cos x$$

N 180

$$D\sqrt{\underbrace{\frac{2\cos^2x-1}{\cos x+\operatorname{sen}x}}_{f(x)}}=D\left(f(x)^{\frac{1}{2}}\right)=\frac{1}{2}f(x)^{-\frac{1}{2}}f'(x)$$

$$f'(x)=D\left(f(x)\right)=\frac{D(2\cos^2x-1)(\cos x+\operatorname{sen}x)-(2\cos^2x-1)D(\cos x+\operatorname{sen}x)}{(\cos x+\operatorname{sen}x)^2}=$$

$$=\frac{-4\operatorname{sen}x\cos x(\cos x+\operatorname{sen}x)-(2\cos^2x-1)(-\operatorname{sen}x+\cos x)}{(\cos x+\operatorname{sen}x)^2}=$$

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

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

$$=\frac{-2\cos^2x\left(\operatorname{sen}x+\cos x\right)-4\operatorname{sen}^2x\cos x-\operatorname{sen}x+\cos x}{(\cos x+\operatorname{sen}x)^2}$$

$$D\sqrt{f(x)}=\frac{1}{2}\sqrt{\frac{\cos x+\operatorname{sen}x}{2\cos^2x-1}}\cdot\frac{-2\cos^2x(\operatorname{sen}x+\cos x)-4\operatorname{sen}^2x\cos x-\operatorname{sen}x+\cos x}{(\cos x+\operatorname{sen}x)^2}$$