Deriválás gyakorló feladatok

Deriváld a következő függvényeket!

1. $f(x) = \dfrac{(\operatorname{arctg} x)^3}{\left(\frac{\pi}{2}\right)^2} + \operatorname{tg}\left((2x-3)^2 - \pi\right)$
2. $f(x) = 3^{\operatorname{arctg}\left(\frac{1}{x+1}\right)}$
3. $f(x) = \log_3\left(\dfrac{x^2-1}{x^2+1}\right)$
4. $f(x) = 3 \cdot (1-5x^2) \cdot \operatorname{arctg}(1-2x)$
5. $f(x) = ln\left(\cos^2\left(\dfrac{3x+2}{1-x^2}\right)\right)$
6. $f(x) = \dfrac{x^2-1}{\arcsin(3-2x^3)}$
7. $f(x) = ln\left(\dfrac{\cos x^2}{x-7x^4}\right)$
8. $f(x) = \arccos\left(e^{\cos\frac{x+1}{1-x}}\right)$
9. $f(x) = \operatorname{tg}^2\left(\dfrac{5x^2+3}{x^2-x+1}\right)$
10. $f(x) = \operatorname{ctg}\left(3\ln^2\left(\dfrac{1}{x}\right) + x^2 + 1\right)$