

$$c) \left[\left(\frac{x-1}{x+1} \right)^{\frac{1}{2}} \right]' = \frac{1}{2} \cdot \left(\frac{x-1}{x+1} \right)^{\frac{1}{2}-1} \cdot \left(\frac{x-1}{x+1} \right)'$$

$$= \frac{1}{2} \left(\frac{x-1}{x+1} \right)^{-\frac{1}{2}} \cdot \frac{x+1 - (x-1)}{(x+1)^2}$$

$$= \frac{1}{\cancel{2}} \cdot \frac{\sqrt{x+1}}{\sqrt{x-1}} \cdot \frac{\cancel{2}}{(x+1)^2}$$

$$= \frac{1}{\sqrt{x-1}} \cdot \frac{(x+1)^{\frac{1}{2}}}{(x+1)^2}$$

$$= \frac{1}{\sqrt{x-1}} \cdot (x+1)^{-\frac{3}{2}} = \frac{1}{\sqrt{x-1} \sqrt{(x+1)^3}}$$

$$= \frac{1}{[(x-1)(x+1)(x+1)^2]^{\frac{1}{2}}} = \frac{1}{\sqrt{x^2-1} \cdot (x+1)}$$