

$$8) \frac{dx}{\sqrt{x^2+7}}$$

$$= \frac{-dx}{-2x} = \frac{1}{2} \frac{dx}{x}$$

$$= \frac{1}{2} \ln(x^2+7)^{-1/2}$$

Using differentiation by parts $-\frac{3}{2}$

$$p'(x) = 2x(-\frac{1}{2})(x^2+7)^{-3/2} + 2(x^2+7)^{-1/2}$$

$$= -2x^2(x^2+7)^{-3/2} + 2(x^2+7)^{-1/2}$$

$$= \frac{-2x^2}{(\sqrt{x^2+7})^3} + \frac{2}{\sqrt{x^2+7}}$$

$$9) \int \frac{1-2x}{1+2x}$$

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

By differentiation by parts

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

$$= \frac{1}{2} \left[\frac{(1+2x-2x-4x^2)}{(1+2x)^{1/2}} \right]$$

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

$$9) \int \frac{1-2x}{1+2x}$$

$$= \left[\frac{(1-2x)(1+2x)^{1/2}}{(1+2x)^{3/2}} \right]$$

$$= \left[\frac{(1+2x-2x-4x^2)}{(1+2x)^{1/2}} \right]$$

$$= \left[\frac{(1-4x^2)}{(1+2x)^{1/2}} \right]$$

$$f(x) = \frac{1}{2} \left[\frac{(1-4x^2)}{(1+2x)^{1/2}} \right]$$

Using chain rule