

The chain rule and the extended power rule

3.7.1

a.
$$\frac{dy}{dx} = \frac{1}{2\sqrt{x^2 + \sqrt{x}}} \left(2x + \frac{1}{2\sqrt{x}} \right)$$

b.
$$\frac{dy}{dx} = 30 \left(\frac{2x-1}{\sqrt{1-x}} + x \right)^{29} \cdot \left(\frac{2\sqrt{1-x} - (2x-1)\frac{-1}{2\sqrt{1-x}}}{1-x} + 1 \right)$$

3.7.2
$$f'(g(h(p(x))))g'(h(p(x)))h'(p(x))p'(x)$$