3.7.7 Simplify the equation, then differentiate it, then solve it for $\mathrm{d}y$, and then divide it by $\mathrm{d}x$:

$$y^2 = \frac{x-1}{x+1};$$
$$xy^2 + y^2 = x - 1;$$
$$y^2 \,\mathrm{d}x + x \,\mathrm{d}(y^2) + \mathrm{d}(y^2) = \mathrm{d}x;$$
$$y^2 \,\mathrm{d}x + x(2y \,\mathrm{d}y) + 2y \,\mathrm{d}y = \mathrm{d}x;$$
$$(2xy + 2y) \,\mathrm{d}y = (1 - y^2) \,\mathrm{d}x;$$
$$\frac{\mathrm{d}y}{\mathrm{d}x} = \frac{1 - y^2}{2xy + 2y} = -\frac{(y-1)(y+1)}{2y(x+1)}.$$