23 $g''(1)$ $\quad g(x) = \frac{x}{x+1}$

$$g'(x) = \frac{(x+1)(1) - x(1)}{(x+1)^2} = \frac{1}{(x+1)^2} = (x+1)^{-2}$$

$$g''(x) = -2(x+1)^{-3} = \frac{-2}{(x+1)^3} \rightarrow -\frac{1}{4}$$

$$\frac{(x+1)^2 \cdot 0 - 1 \cdot 2(x+1)}{(x+1)^4}$$

(33) $f(x) = (x+1)^{-1}$

$f'(x) = -(x+1)^{-2}$

$f''(x) = 2(x+1)^{-3}$

$f'''(x) = -6(x+1)^{-4}$

$f^{(4)}(x) = 24(x+1)^{-5}$

$f^{(n)}(x)$

$f^{(n)}(x) = (-1)^n (x+1)^{-n-1} \cdot n!$