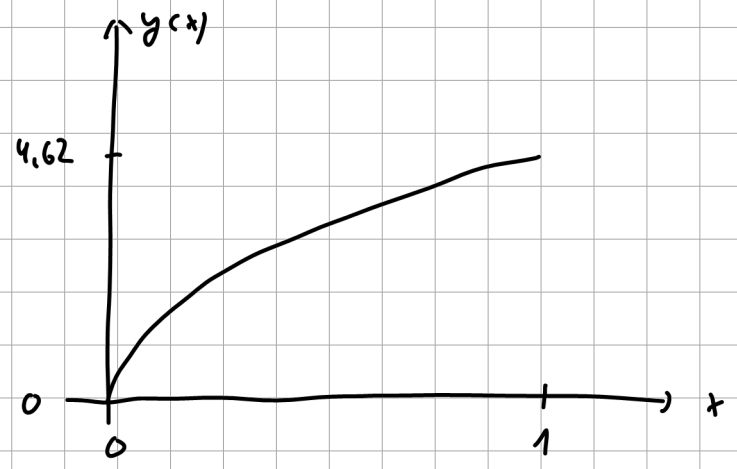
1) $0 \leq x \leq 1$

$y = \log(100x + 1)$

$y(x=0) = \log(1) = 0$

$y(x=1) = \log(101) = 4{,}62$



2) $y = \log(100x + 1)$

Sensitivity: $\frac{dy}{dx} = \frac{1}{100x+1} \cdot 100 = \frac{100}{100x+1}$

3) $y = \frac{3x}{2x^2+7x+1}$ for $x=2$

$$\frac{dy}{dx} = \frac{3\cdot(2x^2+7x+1) - 3x(4x+7)}{(2x^2+7x+1)(2x^2+7x+1)}$$

$$= \frac{6x^2+21x+3-12x^2-21x}{4x^4+14x^3+2x^2+14x^3+49x^2+7x+2x^2+7x+1}$$

$$= \frac{-6x^2+3}{4x^4+28x^3+53x^2+14x+1}$$

$$\left.\frac{dy}{dx}\right|_{x=2} = \frac{-6\cdot 4+3}{4\cdot 16+28\cdot 8+53\cdot 4+14\cdot 2+1}$$

$$= \frac{-21}{64+224+212+28+1}$$

$$= \frac{-21}{529}$$