

Ex 4.2.6

$$f) \log_8(x+4) = 1 - \log_8(x-3)$$

$$\log_8(x+4) = \log_8(8) - \log_8(x-3)$$

$$\log_8(x+4) = \log_8\left(\frac{8}{x-3}\right)$$

$$x+4 = \frac{8}{x-3} \quad | \cdot x-3$$

$$(x+4)(x-3) = 8$$

$$x^2 + 4x - 3x - 12 = 8$$

$$x^2 + x - 20 = 0$$

$$(x+5)(x-4) = 0$$

$$\begin{array}{ccc} \downarrow & & \downarrow \\ -5 & & 4 \end{array}$$

Vérif: $\log_8(\underbrace{-5+4}_{-1})$ \times

$$\log_8(8) = 1 - \log_8(4) \quad \checkmark$$

$$\Rightarrow S = \{4\}$$