Der Logarithmus - Umkehrung d. Potenzierens

Aufgabe 2

a)

$$3 \cdot 4^x = 96 \qquad | : 3$$
$$4^x = 32 \qquad | \log_4$$
$$\log_4(4^x) = \log_4(32) \qquad | \, T$$
$$x = \frac{5}{2}$$

b)

$$1000 \cdot 5^{x+2} = 8 \qquad | : 1000$$
$$5^{x+2} = \frac{1}{125} \qquad | \log_5$$
$$\log_5(5^{x+2}) = \log_5\left(\frac{1}{125}\right) \qquad | \, T$$
$$x + 2 = -3 \qquad | -2$$
$$x = -5$$

c)

$$3^{4^x} = 6561 \qquad | \log_3$$
$$\log_3\left(3^{4^x}\right) = \log_3(6561) \qquad | \, T$$
$$4^x = \log_3(6561) \qquad | \log_4$$
$$\log_4(4^x) = \log_4(\log_3(6561)) $$
$$x = \frac{3}{2}$$