Exponential Equations - Sample Questions Set $12\,$

Solve the following equations without using a calculator.

(Basic 1)
$$3^x = \frac{1}{9}$$

(Basic 2)
$$3^x = 4$$

(Basic 3)
$$e^x = 4$$

(Miscellaneous 4)
$$3 \cdot 4^x = 6$$

(Misc. 5) $3 \cdot e^x = 6 \cdot e^{1-2x}$

(Misc. 6)
$$\frac{2e^x + 1}{1 - e^x} = 3$$

(Misc. 7) $e^x(4-e^x) = -5$