a) $\ln x = 4$

Ensemble de définition : $x > 0$ $\quad D =]0 ; +\infty[$

$x = e^4$ $\quad S = \{e^4\}$

b) $\ln(2 - x) = 0$

EdD : $2 - x > 0$

$-x > -2$

$x < 2 \Rightarrow D =]-\infty ; 2[$

$\ln(2 - x) = \ln 1$

$2 - x = 1$

$-x = 1 - 2$

$-x = -1$

$x = 1 \Rightarrow S = \{1\}$

c) $\ln x = -1$

EdD : $x > 0 \Rightarrow D =]0 ; +\infty[$

$x = e^{-1} = \frac{1}{e} \Rightarrow S = \{\frac{1}{e}\}$

d) $e^{3-2x} = 5$ $\qquad D = \mathbb{R}$

$$\ln\left(e^{3-2x}\right) = \ln(5)$$

$$3 - 2x = \ln(5)$$

$$-2x = -3 + \ln(5)$$

$$2x = 3 - \ln(5)$$

$$x = \frac{3 - \ln(5)}{2} \Rightarrow S = \left\{\frac{3 - \ln(5)}{2}\right\}$$

e) $2e^{x} + 10 = 6$ $\qquad D = \mathbb{R}$

$$2e^{x} = -4$$

$e^{x} = -2 \Rightarrow$ impossible $\Rightarrow S = \emptyset$

f) $2\ln x + 6 = 0$ $\qquad D =]0; +\infty[$

$$2\ln x = -6$$

$$\ln x = -3$$

$$x = e^{-3} = \frac{1}{e^{3}} \Rightarrow S = \left\{\frac{1}{e^{3}}\right\}$$