

Exercice 1 (9.1.8)

a)  $E_a$  (réaction directe) =  $130.5 \text{ kJ mol}^{-1}$

$E_a$  (réaction inverse) =  $99.5 \text{ kJ mol}^{-1}$

b)  $\Delta_r H^0 = 31 \text{ kJ mol}^{-1}$

Exercice 2

a)  $K = 4.56 \times 10^{-5}$

b)  $e^{10}$

Exercice 3 (9.1.10)

$v_{\max} = 1.52 \times 10^{-3} \text{ mol L}^{-1} \text{ s}^{-1}$

$v'_{\max} = 7.6 \times 10^{-4} \text{ mol L}^{-1} \text{ s}^{-1}$

Exercice 4

$V_{\max} = 2.3 \mu\text{mol L}^{-1} \text{ s}^{-1}$

$K_M = 1.1 \mu\text{mol L}^{-1}$

$k_{\text{cat}} = 115 \text{ s}^{-1}$ .

$\varepsilon = 1.0 \cdot 10^8 \text{ L mol}^{-1} \text{ s}^{-1}$

Exercice 5

$[I] = 2.07 \times 10^{-5} \text{ M}$

Exercice 6

320 ml éthanol

Exercice 7

a)  $[A]_{\text{eq}} = [B]_{\text{eq}} = [A]_0/2$

b)  $t = \ln 2 / (2k)$