Corrigé exercice 40 :

— $\ln(54) - 2\ln(3) = \ln(2 \times 3^3) - 2\ln(3) = \ln(2) + 3\ln(3) - 2\ln(3) = \ln(2) + \ln(3) = \ln(6)$

— $\ln(\sqrt{72}) = \dfrac{1}{2}\ln(72) = \dfrac{1}{2}\ln(6^2 \times 2) = \dfrac{1}{2}2\ln(6) + \dfrac{1}{2}\ln(2) = \ln(6) + \dfrac{1}{2}\ln(2)$

Corrigé exercice 41 :

$$\frac{\ln(27)}{\ln(343)} = \frac{\ln(3^3)}{\ln(7^3)} = \frac{3\ln(3)}{3\ln(7)} = \frac{\ln(3)}{\ln(7)}$$

Corrigé exercice 42 :

1. $\ln\left((2^5)^3\right) = \ln\left(2^{15}\right) = 15\ln(2)$
2. $\ln(5^2 \times 2^5) = \ln(5^2) + \ln(2^5) = 2\ln(5) + 5\ln(2)$