Quiz Chapter 13 & 14 − Question Two

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$$
\begin{aligned}
V_b &= \frac{.025 \cdot .175}{.469} \\
&= .00933 [\text{L}] \\
.00933 \cdot .469 &= .004375 [\text{mol}] \\
\frac{.004375}{.03433} &= .12744 [\text{M}] \\
k_b &= \frac{10^{-14}}{6.6 \cdot 10^{-5}} \\
&= 1.52 \cdot 10^{-10} \\
x &= \sqrt{.12744 \cdot 1.52 \cdot 10^{-10}} \\
x &= 4.4 \cdot 10^{-6} \\
14 + \log_{10}(x) &= 8.64
\end{aligned}
\tag{1}
$$