1. Let doubling time be t. Then

$$
\begin{aligned}
2 &= e^{t \times k}, \text{ so} \\
\ln 2 &= tk, \text{ so} \\
t &= \frac{\ln 2}{k} \\
&= \frac{\ln 2}{0.06} \\
&\approx 11.5525
\end{aligned}
$$

Hence the doubling time is approximately 11.5525 hour(s).

2. Let doubling time be t. Then

$$
\begin{aligned}
2 &= e^{t \times k}, \text{ so} \\
\ln 2 &= tk, \text{ so} \\
t &= \frac{\ln 2}{k} \\
&= \frac{\ln 2}{0.08} \\
&\approx 8.6643
\end{aligned}
$$

Hence the doubling time is approximately 8.6643 hour(s).

3. Let doubling time be t. Then

$$
\begin{aligned}
2 &= e^{t \times k}, \text{ so} \\
\ln 2 &= tk, \text{ so} \\
t &= \frac{\ln 2}{k} \\
&= \frac{\ln 2}{0.14} \\
&\approx 4.9511
\end{aligned}
$$

Hence the doubling time is approximately 4.9511 hour(s).