

1. Write the following number without exponents.

$$7.349 \times 10^{-6} = \boxed{0.000007349}$$

$$0.\underbrace{000000}_{-6}7.349$$

2. Write each number in scientific notation.

a)  $-0.00000009478$

$$\underbrace{-0.00000009478}_{-8} = \boxed{-9.478 \times 10^{-8}}$$

b)  $10,008,000,000,000$

$$\underbrace{10,008,000,000,000}_{13} = \boxed{1.0008 \times 10^{13}}$$

3. Perform each calculation.

a)  $(3 \times 10^{-4})(9 \times 10^{13})$

$$\begin{aligned} & \begin{array}{l} 3 \times 9 \\ \downarrow \end{array} \quad \begin{array}{l} -4 + 13 \\ \swarrow \end{array} \\ = & 27 \times 10^9 \\ = & 2.7 \times 10^1 \times 10^9 \\ = & \boxed{2.7 \times 10^{10}} \leftarrow 1 + 9 \end{aligned}$$

b)  $\frac{3 \times 10^3}{6 \times 10^{-7}}$

$$\begin{aligned} & \begin{array}{l} 3 \\ \downarrow 6 \end{array} \quad \begin{array}{l} 3 - (-7) \\ \downarrow \end{array} \\ = & 0.5 \times 10^{10} \\ = & 5 \times 10^{-1} \times 10^{10} \\ = & \boxed{5 \times 10^9} \leftarrow -1 + 10 \end{aligned}$$

Q: What has many keys but can't open any doors?