Section 7.2: Operations with Decimals

Theorem 1: Let $\frac{a}{b}$ be a fraction in simplest form. Then $\frac{a}{b}$ has a terminating decimal representation if and only if b contains only 2s and/or 5s in its prime factorization.

For examples 1–4, express each of the following repeating decimals as a fraction. You do not need to simplify the fraction.

1. $0.7\overline{6}$

2. $0.58\overline{43}$

3. $0.83\overline{2469}$

4. $0.583\overline{169}$

5. Find the following products and express answers in scientific notation.

   (a) $\left(3.5 \times 10^3\right) \times \left(5.2 \times 10^9\right)$

   (b) $\left(7.85 \times 10^{11}\right) \times \left(6.4 \times 10^5\right)$

6. Find the following quotients and express answers in scientific notation.

   (a) $\dfrac{9.3 \times 10^8}{2.4 \times 10^3}$

   (b) $\dfrac{7.612 \times 10^{15}}{5.5 \times 10^7}$