Exercise 18

In the following exercises, find the least common multiple of each pair of numbers using the prime factors method.

$$60, \ 72$$

Solution

Find the prime factorization of 60.

$$
\begin{aligned}
60 &= 2 \times 30 \\
&= 2 \times 6 \times 5 \\
&= 2 \times 2 \times 3 \times 5
\end{aligned}
$$

Find the prime factorization of 72.

$$
\begin{aligned}
72 &= 2 \times 36 \\
&= 2 \times 2 \times 18 \\
&= 2 \times 2 \times 2 \times 9 \\
&= 2 \times 2 \times 2 \times 3 \times 3
\end{aligned}
$$

The number that has all factors from both numbers is $2 \times 2 \times 2 \times 3 \times 3 \times 5 = 360$, so this is the least common multiple.