

Name:

Problem 1: *Give the prime-power decomposition of the number 72.*

Solution:

We have that

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

Therefore the prime-power decomposition of 72 is $2^3 \cdot 3^2$.