

**Problem Set**

1. Show (prove) in detail why  $(2 \cdot 3 \cdot 7)^4 = 2^4 3^4 7^4$ .
2. Show (prove) in detail why  $(xyz)^4 = x^4 y^4 z^4$  for any numbers  $x, y, z$ .
3. Show (prove) in detail why  $(xyz)^n = x^n y^n z^n$  for any numbers  $x, y$ , and  $z$  and for any positive integer  $n$ .