



6.  $f(x)g(y) = h(x + y)$ .

Here,  $f(x)$ ,  $g(y)$ , and  $h(z)$  are unknown functions.

Solution:

$$f(x) = C_1 \exp(C_3 x), \quad g(y) = C_2 \exp(C_3 y), \quad h(z) = C_1 C_2 \exp(C_3 z),$$

where  $C_1$ ,  $C_2$ , and  $C_3$  are arbitrary constants.

### Reference

**Aczél, J. and Dhombres, J.,** *Functional Equations in Several Variables*, Cambridge Univ. Press, Cambridge, 1989.