

Set Theory Problem Session 4

1. Simplify $(3 \cdot \omega + \omega^2) \cdot (\omega + 1 + \omega)$.
2. Show that the function $J(m,n) = 1/2((m+n)^2 + 3m+n)$ is a bijection $\omega \times \omega \rightarrow \omega$. *Hint: use induction on $k = m+n$.*
3. 3.7.1 (ii)
4. 3.7.2.
5. 3.7.3 (i)
6. 3.7.5.
7. 3.7.6 (i)