

BASIC SET THEORY

SOLUTIONS TO TRIVIAL EXERCISES

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1. $\{\phi\}$ $\{\phi, \{\phi\}\}$
2. $\{x\}$
3. ϕ ϕ
4. ϕ ϕ
5. $\{x\}$ $\{y\}$
6. X if $Y \neq \phi$, else ϕ Y if $X \neq \phi$, else ϕ
7. ϕ $\{\langle y, x \rangle\}$
8. $Y \times X$ S
9. ϕ ϕ
10. $\{\langle x, z \rangle\}$
11. $X \times Z$ if $Y \neq \phi$, else ϕ
12. R S
13. ϕ $\{\langle x, x \rangle\}$
14. ϕ ϕ
15. $\text{Rng } R$ $\text{Dom } R$
16. X ϕ
17. X X
18. $\{x, y\}$ $\{x\}$ if $x = y$, else ϕ
19. $X \subseteq Y$ $Y \subseteq X$
20. X X
21. $X \cap A$
22. ϕ
23. X X
24. $A \cup X_i$ $A \cap X_i$