Answer Key
Unit 1: Sets and Set Operations

Instructors:

1. D Bhanu Prakash, Department of Mathematics and Statistics
2. G Sravani, Department of Mathematics and Statistics

1. c) A − B

2. a) {4}

3. a) U′

4. b) {1,2}

5. b) A ∪ A = A

6. c) 4

7. c) 2

8. a) n!

9. b) A × B

10. c) (A − B) ∪ (B − A)

11. b) The set of vowels in English

12. b) {2}

13. c) A − B

14. b) The set of vowels in English

15. b) A′ ∪ B′

16. d) Order matters

17. d) Order matters

18. c) Set of English alphabets

19. c) 2

20. d) Roster form

21. a) U'

22. d) Roster form

23. b) Singleton set

24. b) {1,2}

25. b) The set of vowels in English

26. c) {}

27. b) {1,2}

28. c) {1,2}

29. a) U'

30. a) n!

31. d) Roster form

32. c) Entire area of both circles

33. b) {2}

34. c) A − B

35. b) The set of vowels in English

36. a) n!

37. c) {1,2}

38. d) Order matters

39. b) {2}

40. a) {4}

41. a) Not well-defined (clever is subjective).
b) Well-defined, set = {a, e, i, o, u}.
c) Not well-defined (tall is subjective).

42. a) A = {2, 4, 6, 8, 10}
b) B = {S, C, H, O, L}

43. a) P = {x | x is an even natural number ≤ 10}
b) Q = {x | x is a day of the week from Sunday to Wednesday}

44. A = {1,2,3,4}, B = {1,2,3,4}, C = {1,2,3,4}. All are equal because order and repetition do not matter.

45. a) Finite (25 elements)
b) Infinite (cannot be counted)
c) Not a set (popular is subjective)

46. a) Set = {11,13,17,19,23,29}
b) Not a set (tasty is subjective)
c) Set (rivers are well-defined)

47. a) Subset
b) Not a subset ($0 \notin X$)
c) Subset (equal to X)

48. a) {a, b, c, d}
b) {M, I, S, P}

49. a) {1, 2, 3, 6, 9, 18}
b) {-3, 3}

50. a) Equal and equivalent
b) Neither equal (D has d) nor equivalent (different number of elements)
c) Equal and equivalent