

Section 1.1 – Answers

1. Yes. Duplication doesn't change the set.
2. Yes. Order doesn't matter.
3. No. "Between" doesn't include the endpoints, so the second set is $\{5\}$.
4. No. The second set has negative numbers, which the first doesn't have.
5. Yes. "Between" doesn't include the endpoints, and there aren't any natural numbers between 1 and 2.
6. No. The natural numbers start at 1, so the second set is empty.
7. Finite, since you can list all of the elements.
8. Finite. In fact, the set is the empty set.
9. Infinite, since the set just keeps going in the negative direction.
10. $\{\dots, -5, -3, -1, 1, 3, 5, \dots\}$
11. $\{36, 38, 40\}$
12. $\{2, 4, 6, \dots, 90\}$
13. $\{c, o, l, e, g\}$
14. $\{x \mid x \text{ is an even negative integer}\}$
15. $\{x \mid x \text{ is a natural number and } 21 < x < 25\}$
16. False
17. True
18. False, since $\{3\}$ is a set and Z isn't a set of sets – Z is a set of numbers. It would be correct, however, to say that $3 \in Z$. In the next section, we'll learn that the proper way to compare two sets like $\{3\}$ and Z is to use the idea of a subset.