1   Main Topics

1. Basic rules of limits.

2. How to use the direct substitution to find a limit.

3. How to use the factoring technique to find a limit.

4. How to use the rationalizing technique to find a limit.

5. How to use the Squeeze Theorem to find a limit.

6. How to use the important limit

$$\lim_{x \to 0} \frac{\sin x}{x} = \lim_{x \to 0} \frac{\sin cx}{cx} = \lim_{x \to 0} \frac{\sin(x^n)}{x^n} = 1$$

   to find a limit.

7. How to compute limits of piece-wise defined functions.

8. How to use the one-sided limits to prove that a limit does not exists.

9. The definition of continuity.

10. Properties of continuity.

11. How to find discontinuous points of a function.

12. How to use the intermediate value theorem to prove a function has a zero.

13. How to determine infinite limits.

14. How to find the vertical asymptotes.

15. How to find limits at infinity.

16. how to find the horizontal asymptotes.

17. the $\varepsilon - \delta$ definition of a limit.

2   Review Exercises

Review Exercises of Chapter 1: All odd numbers from 11 to 47 plus 38.