CHAPTER *17*

ABSOLUTE VALUES, EQUATIONS AND INEQUALITIES

17.1   Homework

1. Solve the following equations:

    (a) $|x - 3| = 5$

    (b) $|2x - 1| = 7$

    (c) $|x^2 - 5| = 4$

2. Solve the following equations:

    (a) $\dfrac{x+1}{x-1} = 3$

    (b) $\dfrac{x^2 - 9}{x+1} = x + 3$

    (c) $x - \dfrac{3}{x} = \dfrac{5}{x} - x$

3. Solve the following inequalities. Also show the solution on the real line, and write the answer in the interval notation

    (a) $|x - 2| > 3$

    (b) $|x - 1| > x + 3$

    (c) $\dfrac{x-2}{x+3} \le 3$

4. Solve the following inequalities, using the snake method. Also show the solution on the real line, and write the answer in the interval notation.

    (a) $(x - 1)(x + 2) > 0$

    (b) $(x + 3)(x - 2)^2 \le 0$

    (c) $x(x - 1)(x + 2) \ge 0$

    (d) $x^2(x + 1)^5(x + 2)^3 > 0$

5* Solve the following inequalities, using the snake method. Also show the solution on the real line, and write the answer in the interval notation.

    (a) $|x^2 - x| \ge 2x$

    (b) $\dfrac{x(x - 1)^2}{(x + 1)^2} \ge 0$