1. Find the equation of the straight line such that
   (i) the line passes through the points \((-1, 4)\) and \((2, 5)\),
   (ii) the line passes through the point \((-1, 4)\) with slope 4.

2. Is there a straight line such that passes through the three points \((-1, 4)\), \((2, 5)\) and \((5, 6)\)?

3. Consider the rational function
   \[ y = \frac{2x + 6}{(x + 1)(x - 2)}. \]
   (i) For what values of \(x\) does \(y = 0\)?
   (ii) For what values of \(x\) does \(y \to \infty\)?
   (iii) Tabulate the values of \(y\) corresponding to the values \(x = -4, -3, -2, \ldots, 5\).
   (iv) Use the information from sections (i), (ii) and (iii) to sketch the function \(y = f(x)\) for \(-4 \leq x \leq 5\).

4. Sketch the graphs of each of the following functions.
   (i) \(y = \frac{x+1}{x-2}\).
   (ii) \(y = \frac{x-2}{(x+2)(x+3)}\).

5. Sketch the graphs of the functions
   (i) \(y = |x|\),
   (ii) \(y = |x+1|\),
   (iii) \(y = |x| - x\).

6. Sketch the graphs of the function \(f(x)\) where
   (i) \(f(x) = xu(x)\),
   (ii) \(f(x) = u(x - 1) - u(x - 2)\),
   (iii) \(f(x) = u(x - 1) + u(2 - x) - 1\).

7. Represent the functions \(f(x)\) defined below in terms of the Heaviside function \(u(x)\).
   \[ f(x) = \begin{cases} 
   0 & x \leq 2 \\
   1 & 2 < x \leq 4 \\
   2 & 4 < x \leq 5 \\
   0 & 5 < x
   \end{cases} \]