1. Find an equation of the line through the points \((-2, 5)\) and \((4, 2)\).

   **Solution:** The slope is
   \[
   \frac{5 - 2}{-2 - 4} = \frac{3}{-6} = -\frac{1}{2}.
   \]
   Using the point-slope formula, we get
   \[
   y - 5 = -\frac{1}{2}(x + 2),
   \]
   or
   \[
   y = -\frac{1}{2}x + 4.
   \]

2. What is the average rate of change of the function \(f(x) = \frac{1}{2}x^2 + x\) as \(x\) goes from \(-2\) to \(4\) ?

   **Solution:** The average rate of change is the slope of the secant line. This slope is
   \[
   \frac{f(4) - f(-2)}{4 - (-2)} = \frac{12 - 0}{6} = 2.
   \]