(1)[8 points] Use the definition of the definite integral in the form

$$\int_a^b f(x)\,dx = \lim_{n\to\infty} \sum_{i=1}^{n} f(x_i)\Delta x$$

to evaluate

$$\int_0^5 (1+3x)\,dx\ .$$

Recall that

$$\sum_{i=1}^{n} i = \frac{n(n+1)}{2} \quad \text{and} \quad \sum_{i=1}^{n} i^2 = \frac{n(n+1)(2n+1)}{6}$$

(2)[**7 points**] Evaluate using the evaluation theorem:

$$\int_{-2}^{-1} \left(4y^3 + \frac{2}{3y^3}\right) dx \ .$$