1. Express the limit as a definite integral on the interval $[2, 6]$: $\lim_{n\to+\infty} \sum_{i=1}^{n} \frac{\cos x_i^*}{x_i^*} \Delta x_i$

2. Use the Midpoint Rule with $n = 5$ to estimate the integral $\int_0^2 \frac{x}{x+1}\, dx$. Round the answer to four decimal places.

3. Evaluate the integrals:
   (i). $\int_{-2}^{3} (x^2 - 3)\, dx$
   (ii). $\int_0^{\frac{\pi}{4}} \frac{1+\cos^2 x}{\cos^2 x}\, dx$
   (iii). $\int_{-1}^{1} e^{x+1}\, dx$
   (iv). $\int_0^{\frac{3\pi}{2}} |\sin x|\, dx$

4. Find the general indefinite integral $\int \frac{\sin 2x}{\sin x}$

5. The velocity of a moving particle is $v(t) = t^2 - 2t - 8$.
   (i). Find the displacement during the time $[1, 6]$.
   (ii). Find the distance traveled by the particle during time $[1, 6]$.