Questions

1. Find each of the following anti-derivatives (indefinite integrals):

   - $\int \cos(x) dx$
   - $\int \sin(x) dx$
   - $\int \frac{1}{x} dx$
   - $\int \frac{1}{x+2} dx$
   - $\int \cos(5x) dx$
   - $\int \frac{1}{1+x^2} dx$

2. Find each of the following areas (definite integrals):

   - $\int_0^\pi \cos(x) dx$

   - $\int_{-1}^1 \frac{1}{1+x^2} dx$

   - $\int_5^{10} x^4 - x^2 dx$

   - $\int_{1/2}^{3/2} \frac{1}{x^2}$