Integrals

1. Find the following integrals
   (a) $\int x^9 dx$.   (2)

   (b) $\int x^{-9} dx$ (2)

   (c) $\int 20x^3 dx$ (2)

   (d) $\int (x^3 + x^2 - x + 2) dx$.   (2)

   (e) $\int (4x^3 - 2x^2 - 6) dx$ (2)

   (f) $\int (8x^{-3} - 2x^{-2} - 6) dx$ (2)

2. Find the following integrals by modifying the expressions first, if necessary
   (a) $\int (\frac{3}{x^3} + \frac{12}{x^2} - \frac{1}{x}) dx$ (2)

   (b) $\int (\frac{1}{3x^3} + \frac{1}{4x^2} - \frac{1}{2x}) dx$ (2)

   (c) $\int (x^2 - 3x^2)(7x^3 - 6x^2 - 6) dx$ (2)

   (d) $\int \frac{3x^3 + 4x^2}{2x^2} dx$ (2)

3. Find the following integrals
   (a) $\int (2\cos x - 3\sin x + e^x + \frac{1}{x}) dx$ (2)

   (b) $\int \sqrt{2x} dx$ (2)

   (c) $\int \sqrt[4]{x^7} dx$ (2)

   (d) $\int (x^{\frac{2}{3}} - 2x^{\frac{1}{4}}) dx$ (2)