

Ex 1.3.3

$$a) \int 3 dx = 3x + C$$

$$b) \int 5x dx = \frac{5}{2}x^2 + C$$

$$c) \int (2x+1) dx = x^2 + x + C$$

$$d) \int (5x-4) dx = \frac{5}{2}x^2 - 4x + C$$

$$e) \int (2x^2 - 3x + 2) dx = \frac{2}{3}x^3 - \frac{3}{2}x^2 + 2x + C$$

$$f) \int 5x^3 dx = \frac{5}{4}x^4 + C$$

$$g) \int (-3x^4) dx = -\frac{3}{5}x^5 + C$$

$$h) \int (3x^5 + 2x^4 - 1) dx = \frac{3}{6}x^6 + \frac{2}{5}x^5 - x + C = \frac{1}{2}x^6 + \frac{2}{5}x^5 - x + C$$

Ex 1.3.4

$$a) \int \frac{dx}{x^2} = \int x^{-2} dx = \frac{1}{-1} x^{-1} + C = -\frac{1}{x} + C$$

$$b) \int \frac{2dx}{x^3} = \int 2x^{-3} dx = 2 \cdot \frac{1}{-2} x^{-2} + C = -\frac{1}{x^2} + C$$

$$c) \int \frac{-7dx}{x^5} = \int -7x^{-5} dx = -7 \cdot \frac{1}{-4} x^{-4} + C = \frac{7}{4x^4}$$

$$d) \int \sqrt{x} dx = \int x^{1/2} dx = \frac{1}{\frac{3}{2}} x^{\frac{3}{2}} + C = \frac{2}{3} \sqrt{x^3} + C$$

$$e) \int \sqrt[3]{x} dx = \int x^{1/3} dx = \frac{1}{\frac{4}{3}} x^{\frac{4}{3}} + C = \frac{3}{4} \sqrt[3]{x^4} + C$$

$$f) \int \frac{dx}{\sqrt{x}} = \int x^{-1/2} dx = \frac{1}{\frac{1}{2}} x^{1/2} + C = 2\sqrt{x} + C$$

$$g) \int \frac{dx}{\sqrt[3]{x^2}} = \int x^{-2/3} dx = \frac{1}{\frac{1}{3}} x^{1/3} + C = 3\sqrt[3]{x} + C$$