

$$b) \int \frac{3x^4 - 3x^2 - 7}{4x^2} dx =$$

$$\int \left(\frac{3}{4} x^2 - \frac{3}{4} - \frac{7}{x^2} \right) dx =$$

$$\frac{3}{4} \int x^2 dx - \frac{3}{4} \int dx - 7 \int x^{-2} dx$$

$$c) 7 \int x^{\frac{3}{4}} dx = 7 \cdot \frac{1}{\frac{3}{4} + 1} \cdot x^{\frac{3}{4} + 1} + C$$

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

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

$$e) \int (2 \sin x - 3 \cos x) dx =$$

$$2 \int \sin x - 3 \int \cos x dx = -2 \cos x - 3 \sin x + C$$

$$f) \int \cos(2x) dx = \frac{1}{2} \int \cos(2x) \cdot 2 \cdot dx$$

$$= \frac{1}{2} \sin(2x) + C$$

$$g) 5 \int \frac{1}{\cos^2 x} dx + 5 \int \cos x dx =$$

$$5 \tan x + 5 \sin x + C$$

$$h) 8 \int \sin x dx + \frac{4}{\sqrt{2}} \int x^{-\frac{1}{2}} dx =$$

$$-8 \cos x + \frac{4}{\sqrt{2}} \cdot \frac{1}{-\frac{1}{2}+1} \cdot x^{-\frac{1}{2}+1} + C$$

$$i) \int (3x^2 - 7)^2 dx = \int (9x^4 - 42x^2 + 49) dx$$

$$= 9 \int x^4 dx - 42 \int x^2 dx + 49 \int dx$$

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

$$= \int x^{\frac{5}{2}} dx - 5 \int x^{\frac{1}{2}} dx$$

$$k) \int (3x-5)^6 dx = \frac{1}{3} \int \underbrace{(3x-5)^6}_{()'} \cdot 3 \cdot dx$$

$$= \frac{1}{3} \cdot \frac{1}{7} \cdot (3x-5)^7 + C$$

$$\begin{aligned}
 l) \quad 12 \int \frac{1}{(4-3x)^4} dx &= 12 \cdot \frac{1}{-3} \int \frac{1}{(4-3x)^4} \cdot (-3) dx \\
 &= (-4) \cdot \int \underbrace{(4-3x)^{-4}}_{()'} \cdot (-3) dx
 \end{aligned}$$

$$= (-4) \cdot \frac{1}{-4+1} (4-3x)^{-4+1} + C$$

$$m) \int (3x-8)^{\frac{2}{3}} dx = \frac{1}{3} \int (3x-8)^{\frac{2}{3}} dx$$

$$= \frac{1}{3} \cdot \frac{1}{\frac{2}{3}+1} \cdot (3x-8)^{\frac{2}{3}+1} + C$$

$$n) \quad 2 \int \frac{1}{\underbrace{\cos^2(3x)}_{()'}} \cdot 3 dx = 2 \tan(3x) + C$$

$$d) \int x (x^2+1)^{\frac{1}{2}} dx = \frac{1}{2} \int \underbrace{(x^2+1)^{\frac{1}{2}} \cdot 2x}_{()'} dx$$

$$= \frac{1}{2} \cdot \frac{1}{\frac{1}{2}+1} \cdot (x^2+1)^{\frac{1}{2}+1} + C$$

$$p) \int \frac{2x-1}{\sqrt{x^2-x-1}} dx = \int \underbrace{(x^2-x-1)^{-\frac{1}{2}} \cdot (2x-1)}_{()'} dx$$

$$= \frac{1}{-\frac{1}{2}+1} \cdot (x^2-x-1)^{-\frac{1}{2}+1} + C$$