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

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

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

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

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

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

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

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

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

$(\ )'$

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

l) $$12\int \frac{1}{(4-3x)^4}\,dx = 12\cdot\frac{1}{-3}\int\frac{1}{(4-3x)^4}\cdot(-3)\cdot dx$$

$$= (-4)\cdot\int(\underbrace{4-3x}_{()'})^{-4}\cdot(-3)\,dx$$

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

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

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

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

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

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