1. Calcule cada integral indefinida a seguir:

(a) $\int \dfrac{2dx}{x^2 + 9}$

(b) $\int \dfrac{dx}{1 - 2x^2}$

(c) $\int \dfrac{dx}{\sqrt{4 - x^2}}$

(d) $\int \dfrac{2dx}{x^2\sqrt{4 - x^2}}$

(e) $\int \dfrac{dx}{4x^2 + 4x - 6}$

(f) $\int \dfrac{5dx}{\sqrt{x^2 + 7x - 13}}$

(g) $\int \sqrt{4x^2 + 9}dx$

(h) $\int \sqrt{2x^2 - 4}dx$

(i) $\int \dfrac{\sqrt{x^2 + 9}}{x^3}dx$

(j) $\int \dfrac{dx}{1 - x - x^2}$

(k) $\int \dfrac{dx}{\sqrt{x^2 + 4x + 5}}$

(ℓ) $\int \dfrac{dx}{x^2\sqrt{1 + 2x + 3x^2}}$

(m) $\int \cos^7 x\,dx$

(n) $\int \operatorname{sen}^9 x\,dx$

(o) $\int \operatorname{sen}^6 x \cos^5 x\,dx$

(p) $\int \operatorname{sen}^3 x \cos^9 x\,dx$

(q) $\int \cos^4 x\,dx$

(r) $\int \operatorname{sen}^3 4x \cos^3 4x\,dx$

(s) $\int \sec^3 x\,dx$

(t) $\int \tan^4 x \sec^6 x\,dx$

(u) $\int \tan^4 x\,dx$

(v) $\int \operatorname{sen} 5x \cdot \cos 9x\,dx$

(w) $\int \cos x \cdot \cos 4x\,dx$

(x) $\int \operatorname{sen}\dfrac{3x}{5} \cdot \cos\dfrac{2x}{5}\,dx$

2. Verifique as seguintes integrações:

(a) $\int \sqrt{25 - 9x^2}dx = \dfrac{x}{2}\sqrt{25 - 9x^2} + \dfrac{25}{6}\ \operatorname{arcsen}\dfrac{3x}{5} + c$

(b) $\int \sqrt{10 - 4x + 4x^2}dx = \dfrac{2x - 1}{4}\sqrt{10 - 4x + 4x^2} + \dfrac{9}{4}\ln|2x - 1 + \sqrt{10 - 4x + 4x^2}| + c$

(c) $\int \dfrac{\operatorname{sen}^5 t\,dt}{\sqrt[3]{\cos t}} = -2\sqrt{\cos t}\left(1 - \dfrac{2}{5}\cos^2 t + \dfrac{1}{9}\cos^4 t\right) + c$

(d) $\int \operatorname{sen}^4 ax\,dx = \dfrac{3x}{8} - \dfrac{\operatorname{sen} 2ax}{4a} + \dfrac{\operatorname{sen} 4ax}{32a} + c$

(e) $\int \dfrac{x^2 dx}{\sqrt{9 - x^2}} = \dfrac{9}{2}\operatorname{arcsen}(\dfrac{x}{3}) - \dfrac{x}{2}\sqrt{9 - x^2} + c$