1. p38e01 - Calcula los siguientes límites:

(a) $\int 4x^6 \cdot dx$

Sol: $\frac{4x^7}{7} + K$

(b) $\int 6x^3 + 8x^2 + 3 \cdot dx$

Sol: $\frac{3x^4}{2} + \frac{8x^3}{3} + 3x + K$

(c) $\int \sqrt{2}\sqrt{x} \cdot dx$

Sol: $\frac{2\sqrt{2}x^{\frac{3}{2}}}{3} + K$

(d) $\int \frac{1}{\sqrt[5]{x}} \cdot dx$

Sol: $\frac{5x^{\frac{4}{5}}}{4} + K$

(e) $\int \frac{\sqrt[3]{5}\sqrt[3]{x^2}+\sqrt{3}\sqrt{x^3}}{\sqrt{2}\sqrt{x}} \cdot dx$

Sol: $\frac{\sqrt{2}\left(\frac{6\sqrt[3]{5}\sqrt{x}\sqrt[3]{x^2}}{7}+\frac{\sqrt{3}\sqrt{x}\sqrt{x^3}}{2}\right)}{2} + K$

(f) $\int \frac{1}{x-1} \cdot dx$

Sol: $\log(x-1) + K$

(g) $\int \frac{5}{4x^2+1} \cdot dx$

Sol: $\frac{5\,\mathrm{atan}(2x)}{2} + K$

(h) $\int \frac{2}{9x^2+1} \cdot dx$

Sol: $\frac{2\,\mathrm{atan}(3x)}{3} + K$

(i) $\int \frac{1}{1-4x^2} \cdot dx$

Sol: $-\frac{\log\left(x-\frac{1}{2}\right)}{4} + \frac{\log\left(x+\frac{1}{2}\right)}{4} + K$

(j) $\int \frac{1}{x^2+4} \cdot dx$

Sol: $\frac{\mathrm{atan}\left(\frac{x}{2}\right)}{2} + K$

(k) $\int \frac{2x-3}{x^2-3x+9} \cdot dx$

Sol: $\log\left(x^2-3x+9\right) + K$

(l) $\int 2e^{x^2}x \cdot dx$

Sol: $e^{x^2} + K$

(m) $\int \frac{1}{x-4} \cdot dx$

Sol: $\log(x-4) + K$

(n) $\int \frac{1}{(x-4)^3} \cdot dx$

Sol: $-\frac{1}{2x^2-16x+32} + K$

(ñ) $\int e^{5x} \cdot dx$

Sol: $\frac{e^{5x}}{5} + K$

(o) $\int \frac{\sqrt{x}+x}{x^2} \cdot dx$

Sol: $\log(x) - \frac{2}{\sqrt{x}} + K$

(p) $\int \frac{\log(x)^3}{x} \cdot dx$

Sol: $\frac{\log(x)^4}{4} + K$

(q) $\int \frac{\sin\left(\sqrt{x}\right)}{\sqrt{x}} \cdot dx$

Sol: $-2\cos\left(\sqrt{x}\right) + K$

(r) $\int e^{9+(-2)x} \cdot dx$

Sol: $-\frac{e^{9-2x}}{2} + K$