2 Integra la función de cada apartado:

a) $\sqrt{3x}$ **b)** $\sqrt[3]{5x^2}$ **c)** $\dfrac{x + x^2}{\sqrt{x}}$ **d)** $\dfrac{x^3 - 2}{x^2}$

e) $\dfrac{3}{x}$ **f)** $\dfrac{2}{x + 1}$ **g)** $\dfrac{x - 2}{x^2}$ **h)** $\dfrac{3 - 2x}{x}$

Resolución

a) $\displaystyle\int \sqrt{3x} \; dx = \int \sqrt{3} \; x^{1/2} \; dx = \sqrt{3} \; \dfrac{x^{3/2}}{3/2} + k = \dfrac{2\sqrt{3} \; \sqrt{x^3}}{3} + k = \dfrac{2\sqrt{3x^3}}{3} + k$

b) $\displaystyle\int \sqrt[3]{5x^2} \; dx = \int \sqrt[3]{5} \; x^{2/3} \; dx = \sqrt[3]{5} \; \dfrac{x^{5/3}}{5/3} + k = \dfrac{3\sqrt[3]{5x^5}}{5} + k$

c) $\displaystyle\int \dfrac{x + x^2}{\sqrt{x}} \; dx = \int (x^{1/2} + x^{3/2}) \; dx = \dfrac{x^{3/2}}{3/2} + \dfrac{x^{5/2}}{5/2} + k = \dfrac{2\sqrt{x^3}}{3} + \dfrac{2\sqrt{x^5}}{5} + k$

d) $\displaystyle\int \dfrac{x^3 - 2}{x^2} \; dx = \int (x - 2x^{-2}) \; dx = \dfrac{x^2}{2} - \dfrac{2x^{-1}}{-1} + k = \dfrac{x^2}{2} + \dfrac{2}{x} + k$

e) $\displaystyle\int \dfrac{3}{x} \; dx = 3 \; ln \; |x| + k$

f) $\displaystyle\int \dfrac{2}{x + 1} \; dx = 2 \; ln \; |x + 1| + k$

g) $\displaystyle\int \dfrac{x - 2}{x^2} \; dx = \int \left(\dfrac{1}{x} - \dfrac{2}{x^2} \right) dx = ln \; |x| + \dfrac{2}{x} + k$

h) $\displaystyle\int \dfrac{3 - 2x}{x} \; dx = \int \left(\dfrac{3}{x} - 2 \right) dx = 3 \; ln \; |x| - 2x + k$