

# CORRECTION

## EXERCICE n°19 :

a. On a :

$$\int_{-2}^3 (t^2 - t + 1) dt = \left[ \frac{t^3}{3} - \frac{t^2}{2} + t \right]_{-2}^3 = \frac{85}{6}.$$

b. On a :

$$\int_{-1}^1 (x^2 - 1) dx = \left[ \frac{x^3}{3} - x \right]_{-1}^1 = -\frac{4}{3}.$$

c. On a :

$$\int_1^2 \frac{t^2 - 1}{t^2} dt = \int_1^2 \left( 1 - \frac{1}{t^2} \right) dt = \left[ t + \frac{1}{t} \right]_1^2 = \frac{1}{2}.$$

d. On a :

$$\int_{-1}^{-2} \left( x^2 - \frac{4}{x^2} \right) dx = \left[ \frac{x^3}{3} + \frac{4}{x} \right]_{-1}^{-2} = -\frac{1}{3}.$$

e. On a :

$$\int_0^2 \frac{1}{(1+t)^3} dt = \left[ -\frac{1}{2(1+t)^2} \right]_0^2 = \frac{4}{9}.$$

f. On a :

$$\int_{-2}^1 \frac{4}{(t-2)^2} dt = \left[ -\frac{4}{t-2} \right]_{-2}^1 = 3.$$