

1.3.5 Calculer :

e) $\int (7x - 2)^5 dx$

f) $\int (3x^2 + x)^3 (6x + 1) dx$

e) $\int (7x - 2)^5 dx = \frac{1}{42} (7x - 2)^6 + C$

candidat : $\bullet (7x - 2)^6$; (candidat)' : $6 (7x - 2)^5 \cdot 7 = 42 (7x - 2)^5$

candidat $\bullet K (7x - 2)^6$; $K \cdot 6 (7x - 2)^5 \cdot 7 = 42K (7x - 2)^5$

$$\Rightarrow 42K = 1 \Rightarrow K = \frac{1}{42}$$

f) $\int (3x^2 + x)^3 (6x + 1) dx = \frac{1}{4} (3x^2 + x)^4 + C$

candidat : $K (3x^2 + x)^4$; (candidat)' : $K \cdot 4 (3x^2 + x)^3 \cdot (6x + 1)$

$$1 = 4K \Rightarrow \frac{1}{4}$$

$$(\sin^3(x))' = ((\sin(x))^3)' = 3 (\sin(x))^2 \cdot \cos(x)$$