

24/03/16

$$OM(t) = \frac{1}{8} \times \left(\frac{1}{3}\right) t^3 - \frac{1}{2} \times \frac{1}{2} t^2 + 2t = \frac{1}{24} t^3 - \frac{1}{4} t^2 + 2t + k$$

On sait que $V(0) = 0$

$$\text{d'où } \frac{1}{24} \times 0 - \frac{1}{4} \times 0 + 2 \times 0 + k = k$$

$$\text{d'où } k = 0$$

$$OM(12) = \frac{1}{24} \times 12^3 - \frac{1}{4} \times 12^2 + 2 \times 12 = 60 \text{ m}$$

$$OM(2) = \frac{10}{3}$$

$$OM(7) = \frac{385}{24}$$

$$OM(7) - OM(2) = \frac{385}{24} - \frac{10}{3} \approx 12,71$$

$$V_{\text{moyenne}} = \frac{60}{12} = 5 \text{ m.s}^{-1}$$