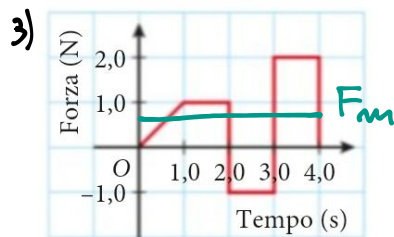
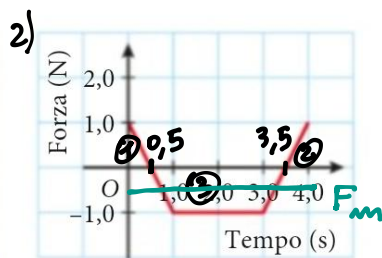
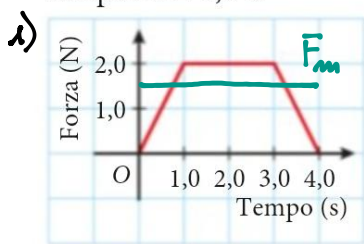


19 Calcola numericamente e disegna la forza media relativa a ciascuno dei tre grafici forza-tempo, nell'intervallo di tempo $\Delta t = 4,0$ s.



[1,5 N; -0,50 N; 0,63 N]

$$1) I = \frac{(4,0 + 2,0) \cdot 2,0}{2} \text{ N}\cdot\text{s}$$

$$= 6,0 \text{ N}\cdot\text{s}$$

$$F_m = \frac{I}{\Delta t} = \frac{6,0 \text{ N}\cdot\text{s}}{4,0 \text{ s}} = 1,5 \text{ N}$$

$$2) I = \textcircled{1} + \textcircled{2} - \textcircled{3} =$$

$$= \left[\frac{1}{2} (0,5 \cdot 1,0) \times 2 - \frac{1}{2} (3,0 + 2,0) \times 1,0 \right] \text{ N}\cdot\text{s}$$

$$= -2,0 \text{ N}\cdot\text{s}$$

$$F_m = \frac{I}{\Delta t} = \frac{-2,0 \text{ N}\cdot\text{s}}{4,0 \text{ s}} = -0,50 \text{ N}$$

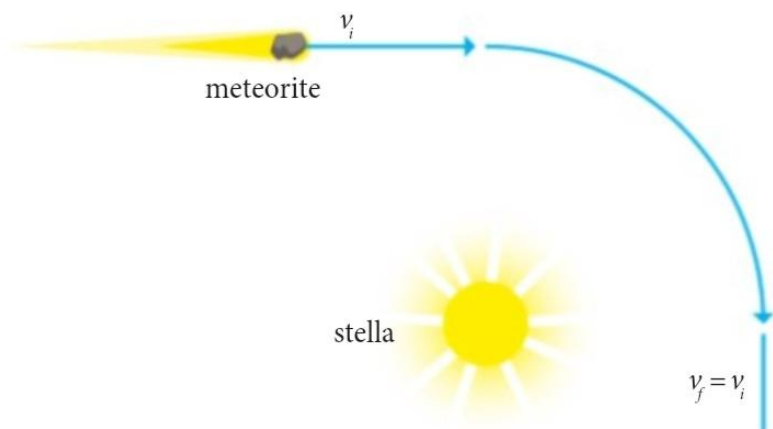
$$3) I = \left[\frac{1}{2} (2,0 + 1,0) \cdot 1,0 - 1,0 \cdot 1,0 + 1,0 \cdot 2,0 \right] \text{ N}\cdot\text{s} =$$

$$= 2,5 \text{ N}\cdot\text{s}$$

$$F_m = \frac{I}{\Delta t} = \frac{2,5 \text{ N}\cdot\text{s}}{4,0 \text{ s}} = 0,625 \text{ N} \approx 0,63 \text{ N}$$

22

FERMATI A PENSARE Un meteorite viaggia alla velocità di 27 km/s e passa nelle vicinanze di una stella. La sua traiettoria è riportata nella figura e la sua velocità alla fine della curva è ancora 27 km/s. Sul meteorite ha agito una forza?



$$\vec{p}_i = m \vec{v}_i$$

$$\vec{p}_f = m \vec{v}_f$$

$$\vec{F}_m \cdot \Delta t = \Delta \vec{p} = \vec{p}_f - \vec{p}_i$$

$$\Delta \vec{p} = \vec{p}_f - \vec{p}_i$$

$$\vec{F}_m = \frac{\Delta \vec{p}}{\Delta t}$$