ROLITA y EL CARACOL CARDIACO

1) $V_0 = 0\ m/s$ $t = 2{,}5\ s$ $V_F = 18\ \frac{Km}{h} = 5\ m/s$

$5 = 0 + \frac{1}{2} a \cdot 2{,}5^2$ $\quad a = 2\ m/s^2$

2) ROLITA SE HA MOVIDO 3s A RAZÓN a

$X = 0 + 2 \cdot 3 = 6\ m$

3) $25\ m$ $4\ s$ $\quad 25 = 0 + 0 + \frac{1}{2} a\, 4^2$ $\quad 3{,}125$

$a = 3{,}125\ m/s^2$

4) $V_0 = 45\ \frac{Km}{h} = 12{,}5\ m/s$

$X_F = X_0 + V_0 t + \frac{1}{2} a t^2$

$0 = 4 + 12{,}5 \cdot 0{,}25 + \frac{1}{2} a \cdot 0{,}25^2$

$a = -228\ m/s^2$

$X_0 = 4\ m$ $\quad X_F = 0\ m$

5) $t = 1{,}561\ s$ $\quad a = 2\ m/s^2$ $\quad V_0 = 1\ m/s$

$X = 0 + 1 \cdot 1{,}561 + \frac{1}{2} 2 \cdot (1{,}561)^2$

$X = 3{,}998\ m$

6) $t = 1{,}561\ s$ $\quad V_F = 12{,}6\ \frac{Km}{h} = 3{,}5\ m/s$

$3{,}5 = 0 + a \cdot 1{,}561$

$a = 2{,}242\ m/s^2$

7) $13{,}68\ \frac{Km}{h} = 3{,}8\ m/s$ $\quad a = 0{,}5\ m/s^2$ $\quad t = 15\ s$

$X = 0 + 13{,}68 \cdot 15 + \frac{1}{2} 0{,}5\, 15^2 = 261{,}45\ m$

8) POSICIÓN FINAL DEL CARACOL $V_0 = 12{,}6\ \frac{Km}{h} = 3{,}5\ m/s$

$X = 3{,}5 \cdot 15 = 52{,}5\ m$

DISTANCIA DE SEPARACIÓN $261{,}45 - 52{,}5 = 208{,}95\ m$

9) $t = 10\ s$ $\quad X_F = 208{,}95\ m$ - DISTANCIA

$X_F = X_0 + V_0 t + \frac{1}{2} a t^2$

$208{,}95 = 0 + \frac{1}{2} a \cdot 10^2$ $\quad a = 4{,}179\ m/s^2$

10) t llegada del sonido desde $208{,}95\ m$

$208{,}95 = 340\ t$ $\quad t = 0{,}614\ s$