

TAREA No. #6.

1) $V_0 = 50 \text{ km/h}$ $V = 70 \text{ km/h}$ $T = 45$
 $A = 2$

$$50 \text{ km} = \frac{1,000}{3,600} = \frac{1}{3,600} = \frac{50,000 \text{ m}}{3,600 \text{ s}} =$$

$$13.89 \text{ m/s}$$

$$70 \text{ km/s} = \frac{1,000}{3,600} = \frac{1}{3,600} = \frac{70,000}{3,600} = 19.44 \frac{\text{m}}{\text{s}}$$

$$a = \frac{19.44 \text{ m/s} - 13.89 \text{ m/s}}{45} =$$

$$A = 1.3875 \text{ m/s}^2$$

2) $V_0 = 30 \text{ km/h}$ $V = 0$ $T = 8.6 \text{ g}$ $A =$

$$30 \text{ km/h} = \frac{1,000}{3,600} = \frac{1}{3,600} = \frac{30,000}{3,600} =$$

$$8.33 \text{ m/s}$$

$$A = 0 \text{ m/s} - 8.33 \text{ m/s} = A = -1.04 \text{ m/s}$$

$$3) v_0 = 0 \quad a = 0.24 \text{ m/s}^2 \quad t = 16 \text{ seg}$$

$$v = ? \quad s = ?$$

$$v = 0 + 0.24 \text{ m/s}^2 \times 16 \text{ seg} = v = 3.84 \text{ m/s}$$

$$s = 0 + 16 \text{ seg} + 0.24 \text{ m/seg}^2 \times (16 \text{ seg})^2$$

$$s = 0 + 0.24 \text{ m/seg}^2 \times \frac{2.56 \text{ seg}^2}{2} =$$

$$s = 0 + 30.72 \text{ m}$$

$$s = 30.72 \text{ m}$$

$$4) v_0 = 18 \text{ m/s} \quad a = 0.18 \text{ m/s}^2 \quad t = 28 \text{ seg}$$

$$s = ? \quad v = ?$$

$$v = 18 \text{ m/s} + 0.18 \text{ m/seg}^2 \times 28 \text{ seg}$$

$$v = 18 \text{ m/s} + 5.04 \text{ m/seg}$$

$$v = 23.04 \text{ m/s}$$

$$s = 18 \text{ m/s} \times 28 \text{ seg} + 0.18 \text{ m/seg}^2 \times (28 \text{ seg})^2$$

$$s = 504 \text{ m} + 0.18 \text{ m/seg}^2 \times \frac{784 \text{ seg}^2}{2}$$

$$s = 504 \text{ m} + 70.56 \text{ m} = 574.56 \text{ m}$$



$$5) \quad v_0 = 15 \text{ m/s} \quad a = 0.8 \text{ m/s}^2$$

$$s = 800 \text{ m} \quad v = ? \quad t = ?$$

$$v = \sqrt{v_0^2 + 2as}$$

$$v = \sqrt{(15 \text{ m/s})^2 + 2 \times 0.8 \text{ m/s}^2 \times 800 \text{ m}}$$

$$v = \sqrt{225 \text{ m}^2/\text{s}^2 + 1280 \text{ m}^2/\text{s}^2}$$

$$v = \sqrt{1505 \text{ m}^2/\text{s}^2}$$

$$t = \frac{38.80 \text{ m/s} - 15 \text{ m/s}}{0.8 \text{ m/s}^2}$$

$$t = \frac{23.80 \text{ m/s}}{0.8 \text{ m/s}^2}$$

$$t = 29.75 \text{ seg}$$

$$6) \quad v_0 = 60 \text{ km/h} \quad v = 0 \quad t = 10 \text{ seg} \quad a = ?$$

$$\frac{60 \text{ km}}{1 \text{ h}} = \frac{1000}{1} \times \frac{1}{3600} = \frac{60000}{3600} =$$

$$16.67 \text{ m/seg}$$

$$A = 0 - 16.67 \text{ m/seg}$$

$$A = -1.667 \text{ m/seg}^2$$



7) $a = 3 \text{ m/sec}^2$ $t = 20 \text{ seg}$ $v_0 = ?$ (2)

$s = ?$ $v = 0$

$v_0 = 0 - 3 \text{ m/sec}^2 \times 20 \text{ seg}$ $v_0 = ?$

$s = ?$ $v = 0$

$v_0 = 0 - 3 \text{ m/sec}^2 \times 20 \text{ seg}$

$v_0 = 60 \text{ m/sec}$

$s = 60 \text{ m/sec} \times 20 \text{ seg} - 3 \text{ m/s}^2 \times (20 \text{ seg})^2$

$s = 1,200 \text{ m} - \frac{3 \text{ m/sec}^2 \times 400 \text{ seg}^2}{2}$

$s = 1,200 \text{ m} - 600 \text{ m}$

$s = 600 \text{ m}$



$$8) v_0 = 0 \quad a = 6 \text{ ms/s}^2 \quad v = 80 \text{ km/h}$$

$$t = ?$$

$$\frac{80 \text{ km}}{1 \text{ h}} = \frac{1000}{1} = \frac{1}{3600} = \frac{80000}{3600} =$$

$$22.22 \text{ m/s}$$

$$t = 0 - 22.22 \text{ m/seg}$$

$$t = 3.70 \text{ seg}$$