

| Maneio | # voltas | r (m)                              | t (s) | T (s)                        | f (Hz) | $\omega$ (rad/s)                            | v (m/s)                      |
|--------|----------|------------------------------------|-------|------------------------------|--------|---------------------------------------------|------------------------------|
| Lento  | 5        | 31.415<br>$2\pi \times 5 = 31.415$ | 8 seg | 8.8959<br>$2\pi \div 0.7063$ | -5     | 0.7063<br>$(\frac{180^\circ \cdot \pi}{8})$ | 3.9259<br>$\frac{31.415}{8}$ |
| Rápido | 5        | 31.415<br>$2\pi \times 5 = 31.415$ | 4 seg | 4.4445<br>$2\pi \div 1.4137$ | -5     | 1.4137<br>$(\frac{180^\circ \cdot \pi}{4})$ | 7.8539<br>$\frac{31.415}{4}$ |

| # voltas | r (m)   | t (s) | f (Hz) | v (m/s)                    | $a_c$ (m/s <sup>2</sup> )        | m (kg) | $F_c$ (N) |
|----------|---------|-------|--------|----------------------------|----------------------------------|--------|-----------|
| 10       | 62.8318 | 16    | -10    | 62.8318<br>7.16<br>3.9269  | $\frac{62.8318}{16^2}$<br>0.2454 | 0.1 kg | 0.02454   |
| 15       | 94.2478 | 24    | -15    | 94.2478<br>7.24<br>22.6195 | $\frac{94.2478}{24^2}$<br>0.1636 | 0.1 kg | 0.5428    |

$$F_c = m \cdot \frac{v^2}{r}$$

$$0.1 \cdot \frac{3.9269^2}{62.8318} = 15.4205$$

$$0.1 \cdot \frac{22.6195^2}{94.2478} = 511.641$$