

ΜΕΤΑΤΡΟΠΕΣ ΜΟΝΑΔΩΝ

(πιθανές μικρές αποκλίσεις οφείλονται στις στρογγυλοποιήσεις)

Μήκος (Length)

1 m = 100 cm = 10^{-3} km
1 m = 39,37 in. = 3,281 ft
1 in. = 2,54 cm \Leftrightarrow 1 cm = 0,3937 in.
1 ft = 12 in. = 0,3048 m = 30,48 cm
1 yd = 3 ft = 0,9144 m = 91,44 cm
1 mi = 1,609 km = 5280 ft \Leftrightarrow 1 km = 0,6214 mi
1 n.m. = 1,852 km = 6080 ft (*nautical mile*)
1 Å = 10^{-10} m = 10^{-8} cm
1 έτος φωτός = $9,461 \times 10^{15}$ m

Μάζα (Mass)

1 kg = 1000 g
1000 kg = 1 t (*metric ton*)
1 slug = 14,59 kg
1 u = $1,66 \times 10^{-27}$ kg (*atomic mass unit*)

Χρόνος (Time)

1 h = 60 min = 3600 s
1 day = 24 h = $1,44 \times 10^3$ min = $8,640 \times 10^4$ s
1 year \approx 365,24 days = $3,156 \times 10^7$ s

Θερμοκρασία (Temperature)

$\theta(^{\circ}\text{C}) = T(\text{K}) - 273$
 $\theta(^{\circ}\text{C}) = 5/9 * (F - 32) \Leftrightarrow F = \theta * 9/5 + 32$

(θ : η θερμοκρασία σε $^{\circ}\text{C}$, T: η θερμοκρασία σε Kelvin και F: η θερμοκρασία σε Fahrenheit)

Επίπεδη Γωνία (Plane Angle)

1 rad = $57,30^{\circ} = 180^{\circ}/\pi \Leftrightarrow 1^{\circ} = 0,01745$ rad = $\pi/180^{\circ}$
1 πλήρης περιστροφή = $360^{\circ} = 2\pi$ rad
1 rev/min = 1 rpm = 0,1047 rad/s

Στερεά Γωνία (Solid Angle)

1 σφαίρα = 4π στερακτίνια = 12,57 στερακτίνια

Πυκνότητα (Density)

$$1 \text{ gr/cm}^3 = 1 \text{ kg/lit} = 1000 \text{ kg/m}^3$$

$$1 \text{ kg/m}^3 = 1000 \text{ gr/m}^3 = 1 \text{ gr/lit} = 10^{-3} \text{ gr/cm}^3$$

Επιφάνεια (Area)

$$1 \text{ m}^2 = 10^4 \text{ cm}^2 = 10,76 \text{ ft}^2 = 1550 \text{ in}^2$$

$$1 \text{ in.}^2 = 6,452 \text{ cm}^2 = 6,944 \times 10^{-3} \text{ ft}^2 \Leftrightarrow 1 \text{ cm}^2 = 0,155 \text{ in.}^2$$

$$1 \text{ ft}^2 = 144 \text{ in.}^2 = 0,0929 \text{ m}^2$$

$$1 \text{ mi}^2 = 2,59 \times 10^6 \text{ m}^2$$

$$1 \text{ στρέμμα} = 1000 \text{ m}^2$$

$$1 \text{ εκτάριο} = 10^4 \text{ m}^2 = 10 \text{ στρέμματα}$$

Όγκος (Volume)

$$1 \text{ m}^3 = 10^3 \text{ dm}^3 = 10^6 \text{ cm}^3 = 35,315 \text{ ft}^3 = 6,102 \times 10^4 \text{ in.}^3$$

$$1 \text{ lit} = 1 \text{ dm}^3 = 10^{-3} \text{ m}^3 = 1000 \text{ cm}^3 = 0,0353 \text{ ft}^3 = 61,02 \text{ in.}^3$$

$$1 \text{ ft}^3 = 1728 \text{ in.}^3 = 2,832 \times 10^{-2} \text{ m}^3 = 28,32 \text{ lit} = 7,481 \text{ gal}$$

$$1 \text{ US fluid gallon} = 3,786 \text{ lit} = 3,786 \times 10^{-3} \text{ m}^3 = 0,134 \text{ ft}^3 = 231 \text{ in.}^3$$

Ταχύτητα (Velocity)

$$1 \text{ m/s} = 100 \text{ cm/s} = 3,281 \text{ ft/s} \Leftrightarrow 1 \text{ ft/s} = 0,3048 \text{ m/s}$$

$$1 \text{ km/h} = 0,2778 \text{ m/s} = 0,6214 \text{ mi/h} = 0,9113 \text{ ft/s}$$

$$1 \text{ mi/h} = 1,467 \text{ ft/s} = 0,447 \text{ m/s} = 1,61 \text{ km/h}$$

$$1 \text{ mi/min} = 60 \text{ mi/h} = 88 \text{ ft/s}$$

$$1 \text{ knot} = 1 \text{ n.m./h} = 1,852 \text{ km/h} = 0,5149 \text{ m/s}$$

Επιτάχυνση (Acceleration)

$$1 \text{ m/s}^2 = 100 \text{ cm/s}^2 = 3,281 \text{ ft/s}^2$$

$$1 \text{ ft/s}^2 = 0,3048 \text{ m/s}^2 = 30,48 \text{ cm/s}^2$$

Δύναμη / Βάρος (Force / Weight)

$$1 \text{ N} = 10^5 \text{ dyn} = 0,2248 \text{ lb}$$

$$1 \text{ lb} = 4,448 \text{ N}$$

$$1 \text{ dyn} = 10^{-5} \text{ N} = 2,248 \times 10^{-6} \text{ lb}$$

(όταν $g = 9,80 \text{ m/s}^2$, ένα σώμα με μάζα 1 kg έχει βάρος $9,80 \text{ N} = 2,205 \text{ lb}$)

Ισχύς (Power)

$$1 \text{ W} = 1 \text{ J/s} = 0,738 \text{ ft}\cdot\text{lb/s}$$

$$1 \text{ hp} = 746 \text{ W} = 550 \text{ ft}\cdot\text{lb/s}$$

$$1 \text{ Btu/h} = 0,293 \text{ W} = 0,2161 \text{ ft}\cdot\text{lb/s}$$

Ενέργεια / Έργο / Θερμότητα (Energy / Work / Heat)

$$1 \text{ J} = 10^7 \text{ ergs} = 0,7376 \text{ ft}\cdot\text{lb} = 2,778 \times 10^6 \text{ kWh}$$

$$1 \text{ kWh} = 3,60 \times 10^6 \text{ J} = 3413 \text{ Btu}$$

$$1 \text{ cal} = 4,186 \text{ J} \Leftrightarrow 1 \text{ J} = 0,2389 \text{ cal} \text{ (θερμίδα υπολογισμένη στους } 15^\circ\text{C)}$$

$$1 \text{ Btu} = 252 \text{ cal} = 1,054 \times 10^3 \text{ J} = 778 \text{ ft}\cdot\text{lb} = 2,930 \times 10^{-4} \text{ kWh}$$

$$1 \text{ ft}\cdot\text{lb} = 1,356 \text{ J} = 3,766 \times 10^{-7} \text{ kWh} = 1,285 \times 10^{-3} \text{ Btu}$$

$$1 \text{ eV} = 1,6 \times 10^{-19} \text{ J} \Leftrightarrow 1 \text{ J} = 6,242 \times 10^{18} \text{ eV}$$

$$1 \text{ u} = 931,5 \text{ MeV} \text{ (atomic mass unit), Ισοδυναμία μάζας-ενέργειας}$$

Πίεση (Pressure)

$$1 \text{ Pa} = 1 \text{ N/m}^2 = 10 \text{ dyn/cm}^2 = 1,450 \times 10^{-4} \text{ lb/in.}^2 = 0,209 \text{ lb/ft}^2$$

$$1 \text{ bar} = 10^5 \text{ Pa} = 14,50 \text{ lb/in.}^2$$

$$1 \text{ atm} = 1,013 \text{ bar} = 1,013 \times 10^5 \text{ Pa} = 14,70 \text{ lb/in.}^2 = 2117 \text{ lb/ft}^2$$

$$1 \text{ atm} = 760 \text{ mm Hg} = 76,0 \text{ cm Hg}$$

$$1 \text{ mm Hg} = 1 \text{ torr} = 133,3 \text{ Pa} = 0,01934 \text{ lb/in.}^2 = 2,785 \text{ lb/ft}^2$$

$$1 \text{ psi} = 1 \text{ lb/in.}^2 = 6,805 \times 10^{-2} \text{ atm} = 0,5171 \text{ mmHg} = 6895 \text{ Pa} = 144 \text{ lb/ft}^2$$

$$1 \text{ lb/ft}^2 = 6,944 \times 10^{-3} \text{ lb/in.}^2 = 47,88 \text{ Pa} = 4,725 \text{ atm} = 3,951 \times 10^{-3} \text{ mmHg}$$

Μαγνητικό πεδίο

$$1 \text{ gauss} = 10^{-4} \text{ Tesla} \Leftrightarrow 1 \text{ Tesla} = 1 \text{ Weber/m}^2 = 10^4 \text{ gauss}$$