11 Physics

Units Conversion Practice

Date: ANSWERS

Complete the indicated units conversions. Be sure to keep the same number of significant digits after the conversion. Show your work!!

a) 19200 nm = ? mm

0.0192 mm

0.0192 mm

1.92×10^{-2} mm

b) 0.0000035 Gg = ? hg

35 hg.

c) 764 000 μm = ? dm

7.64 dm

d) 12 km = ? cm

1,200,000 cm

1.2×10^{6} cm.

e) 0.084 km^2 = ? hm^2

* km → hm
FACTOR = ×10
* km^2 → hm^2
FACTOR = $(10)^2$.

$0.084 \times 100 = 8.4\ hm^2$

f) 894 300 mm^3 = ? dam^3

* mm → dm
FACTOR = $\times 10^{-2}$
* mm^3 → dm^3
FACTOR = $(10^{-2})^3 = 10^{-6}$

$894{,}300 \times 10^{-6} = 0.8943$

g) 7.6×10^7 s = ? years

1 YEAR = 365 × 24 × 60 × 60 s
= 31536000 s.

1 s = 3.171×10^{-8} YEAR.

$\Rightarrow 7.6 \times 10^7 \times 3.171 \times 10^{-8} = 2.41$ YEARS

h) 152 km/h = ? m/s

$152 \times \frac{1000}{3600} = 42.2$ m/s