

Operations w/ measurements

How units work

Units are similar to variables in math

Add: $a + a = 2a$	$2m + 1m = 3m$
Mult: $a \times a = a^2$	$2m \times 1m = 2m^2$
Div: $\frac{a}{a} = 1$ $a \div b = \frac{a}{b}$	$\frac{2m}{1m} = 2$ $2m \div 1s = 2 \frac{m}{s}$

Multiplying

a. $3.96g \times 2.8g$

$= 11.088g \cdot g \xrightarrow{>4 \uparrow} \underline{11.09g^2}$

(intermediate)

Round to "2 places after" maximum

0-4: same 5-9: up $\uparrow$

Division

b. $96.1 \text{ m} / 3.2 \text{ s}$

$$= 29.9\overline{3769} \text{ m/s} \quad \begin{array}{l} \swarrow > 4 \uparrow \\ \searrow \end{array} \quad \frac{\text{m}}{\text{s}}$$

$$\rightarrow \underline{29.94 \text{ m/s}}$$

c. $39.1 \text{ m} \cdot \text{s} / 3.8 \text{ s}$

$$\begin{array}{c} \underline{\text{m} \cdot \text{s}} \\ 2 \text{ units cancel} \end{array}$$

$$= 10.28947 \frac{\text{m} \cdot \cancel{\text{s}}}{\cancel{\text{s}}}$$

$$\rightarrow \underline{10.29 \text{ m}}$$

Combined (mult and divide)

d. $(6.32 \text{ kg} \cdot 3.8 \text{ m}) / 2.8 \text{ s}^2$

$$= \frac{6.32 \times 3.81}{2.8} \cdot \frac{\text{kg} \cdot \text{m}}{\text{s}^2}$$

$$= 8.59971 \frac{\text{kgm}}{\text{s}^2} = \underline{8.60 \frac{\text{kgm}}{\text{s}^2}}$$