Check your solutions against those on my website as you work!

Unit Conversion 3 - Converting Rates

List 6 different units for you could use to measure speed:

List 4 different pricing units that might appear in a grocery store's bulk section:

List 4 different units that could be used to measure a person's salary or wage:

Convert the following by multiplying by a conversion factor:

a) 2.5km/h to m/h $\frac{2.5km}{1h}$ * $\frac{1000m}{1km}$ = $25\ 000m/h$

b) $400/month to $/day $\frac{\$400}{month}$ * $\frac{1\ month}{30\ day}$ = $\$13.3/day$

c) $2.99/100g to $/kg $\frac{\$2.99}{100g}$ * $\frac{1000g}{1kg}$ = $\$29.99/kg$

d) $3.50/100g to $/g $\frac{\$3.50}{100g}$ = $\$0.035/g$

e) 20m/s to km/s $\frac{20m}{s}$ * $\frac{1km}{1000m}$ = $0.02km/s$

f) 35cm/s to cm/min $\frac{35cm}{s}$ * $\frac{60s}{min}$ = $2\ 100cm/min$

g) 18.35km/h to km/day $\frac{18.35km}{h}$ * $\frac{24h}{day}$ = $440.4km/day$

h) 400g/L to g/mL

$$\frac{400g}{L} * \frac{1L}{1000mL} = 0.4g/mL$$

i) 25g/mL to kg/mL

$$\frac{25g}{mL} * \frac{1kg}{1000g} = 0.025kg/mL$$

j) 18m/s to m/min

$$\frac{18m}{s} * \frac{60s}{min} = 1\ 080m/min$$

Convert the following by multiplying by TWO or more conversion factors:

k) 14m/s to m/h

$$\frac{14m}{s} * \frac{60s}{min} * \frac{60min}{h} = 50\ 400m/h$$

l) $125/day to $/decade

$$\frac{\$125}{day} * \frac{365day}{1\ year} * \frac{10year}{1deacde} = \$456\ 250/decade$$

m) 35cm/s to km/s

$$\frac{35cm}{s} * \frac{1m}{100cm} * \frac{1km}{1000m} = 0.00035km/s$$

n) 18cm/s to m/min

$$\frac{18cm}{s} * \frac{60s}{min} * \frac{1m}{100cm} = 10.8m/min$$

o) 4.7m/s to km/h

$$\frac{4.7m}{s} * \frac{1km}{1000m} * \frac{60s}{min} * \frac{60min}{h} = 16.95km/h$$

p) 17.3g/L to kg/mL

$$\frac{17.3g}{1L} * \frac{1kg}{1000g} * \frac{1L}{1000mL} = 0.0000173kg/mL$$

Highlight or put a star next to questions that stumped you!

q) 12km/h to m/day $\qquad \frac{12km}{h} * \frac{24h}{1\,day} * \frac{1000m}{1km} = 288\,000m/day$

r) 4.2km/min to km/day $\qquad \frac{4.2km}{min} * \frac{60min}{1h} * \frac{24h}{day} = 6\,048km/day$

s) $1000/wk to $/h $\qquad \frac{\$1000}{wk} * \frac{1wk}{7day} * \frac{1day}{24h} = \$5.95/h$

t) $35/h to $/s $\qquad \frac{\$35}{h} * \frac{1h}{60min} * \frac{1min}{60s} = \$0.0097/s$

u) $100 000/yr to $/h $\qquad \frac{\$100\,000}{yr} * \frac{1yr}{365day} * \frac{1day}{24h} = \$11.42/h$

v) 0.4mL/s to L/yr

$$\frac{0.4mL}{s} * \frac{1L}{1000mL} * \frac{60s}{1min} * \frac{60min}{1h} * \frac{24h}{1day} * \frac{365day}{1yr} = 12614.4L/yr$$

w) 15cm/s to km/h $\qquad \frac{15cm}{s} * \frac{60s}{1min} * \frac{60min}{1h} * \frac{1m}{100cm} * \frac{1km}{1000m} = 0.54km/h$

Highlight or put a star next to questions that stumped you!