24. d = distance $rt = d$

Abigail

$\frac{2.5}{2.5}r = \frac{155}{2.5}$

$r = 62$ mph

hrs	Distance
1	62
2	124
3	186
4	248

Quan

$\frac{2}{2}r = \frac{144}{2}$

$r = 72$ mph

hrs	distance
1	72
2	144
3	216
4	288

Yes, between 3 and 4 hrs.

$$\frac{0.75\text{C}}{2\text{ doz.}} = \frac{\phantom{0.75\text{C}}}{4.5\text{ doz.}}$$

6-3 Converting Rates and Measurements

$\frac{1\ hr.}{60\ min.}$

Unit Multiplier

Dimensional Analysis – including the units as factors when you are solving a problem.

$1\ hr = 60\ min.$

$\frac{1\ hr}{60\ min}$ $\frac{60\ min}{1\ hr.}$

$$\frac{760 \text{ miles}}{1 \text{ hr}} = \frac{\text{miles}}{\text{min.}}$$

$$\frac{1 \text{ hr.}}{60 \text{ min}} \quad \frac{60 \text{ min}}{1 \text{ hr.}}$$

$$\frac{760 \text{ miles}}{1 \text{ hr.}} \times \frac{1 \text{ hr}}{60 \text{ minutes}} = \frac{760}{60}$$

$$\frac{12.6 \text{ miles}}{1 \text{ minute}}$$

$$\frac{\$1742}{1\text{ yr.}} = \frac{\$}{1\text{ week}}$$

$\frac{1\text{ yr}}{52\text{ wks.}}$ $\frac{52\text{ wks}}{1\text{ yr.}}$ $\frac{\$1742}{1\text{ yr.}} \times \frac{1\text{ yr}}{52\text{ wks}} = \frac{\$1742}{52}$

$\frac{\$33.50}{1\text{ week}}$

$$\frac{\$1742}{1\text{ yr.}} \times \frac{1\text{ yr}}{365\text{ days}} \times \frac{7\text{ days}}{1\text{ week}} = \frac{12,194}{365} = \frac{\$33.41}{1\text{ week}}$$

$\frac{7\text{ days}}{1\text{ wk}}$ $\frac{1\text{ wk}}{7\text{ days}}$ $\frac{365\text{ days}}{1\text{ yr}}$ $\frac{1\text{ yr}}{365\text{ days}}$.

$$\frac{176\text{ ft}}{1\text{ sec}} = \frac{120\text{ mi}}{1\text{ hr}}$$

$$\frac{176\text{ ft}}{1\text{ sec}} \times \frac{1\text{ mi}}{5280\text{ ft}} \times \frac{60\text{ sec}}{1\text{ min}} \times \frac{60\text{ min}}{1\text{ hr}} = \frac{633{,}600}{5280}$$

$$\frac{5280\text{ ft}}{1\text{ mi}} \cdot \frac{1\text{ mi}}{5280\text{ ft}} \quad \frac{1\text{ min}}{60\text{ sec}} \cdot \frac{60\text{ sec}}{1\text{ min}} \quad \frac{60\text{ min}}{1\text{ hr}} \cdot \frac{120}{\frac{1\text{ hr}}{60\text{ min}}}$$

$$\frac{320\ km}{1\ hr} = \frac{88\frac{8}{9}\ meters}{1\ sec.}$$

m = meters

$$\frac{1000\ m}{1\ km}\ \frac{1\ km}{1000\ m}\qquad \frac{1\ min}{60\ sec}\ \frac{60\ sec}{1\ min}\qquad \frac{60\ min}{1\ hr}\ \frac{1\ hr}{60\ min}$$

$$\frac{320\ km}{1\ hr} \times \frac{1000\ m}{1\ km} \times \frac{1\ hr}{60\ min} \times \frac{1\ min}{60\ sec} = \frac{320{,}000}{3600} = 88.\overline{8}$$

$$88\frac{8}{9}$$