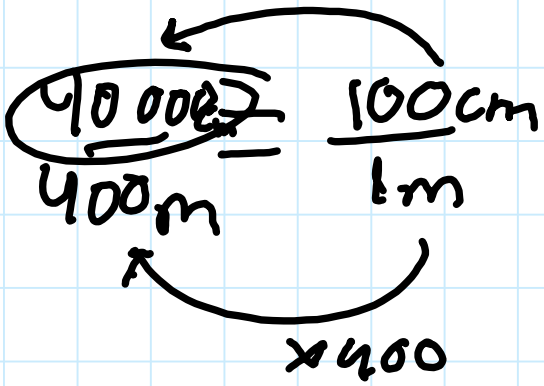
a) cm? 400m



$$400\,\text{m} \times \frac{100\,\text{cm}}{1\,\text{m}} = 40000\,\text{cm}$$

b) in? 1m

$$1\,\text{m} \times \frac{100\,\text{cm}}{1\,\text{m}} = 100\,\text{cm} \times \frac{1\,\text{in}}{2.54\,\text{cm}} = 39.37\,\text{in}$$

c) mm? $\frac{1}{2}$ km

$$\frac{1}{2}\,\text{km} \times \frac{1000\,\text{m}}{1\,\text{km}} \times \frac{100\,\text{cm}}{1\,\text{m}} \times \frac{10\,\text{mm}}{1\,\text{cm}}$$

$$= 500{,}000\,\text{mm}$$

d) Um? 4m

10^{-6} m = 1Mm

$4m \times \frac{10^6 \text{ Mm}}{10^{-6} \text{ m}} = 4{,}000{,}000 \text{ Mm}$

e) mm? 0.00024km

$0.00024 \text{ km} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{100 \text{ cm}}{1 \text{ m}}$

$\times \frac{10 \text{ mm}}{1 \text{ cm}} = 240 \text{ mm}$

f) yd? 150m

1in = 2.54cm

1m = 3.3ft

$150 \text{m} \times \frac{3.3 \text{ ft}}{1 \text{ m}} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{1 \text{ yd}}{36 \text{ in}}$

$= 165 \text{yd}$

$150 \text{m} \times \frac{1 \text{ yd}}{0.9144 \text{m}} = 164 \text{yd}$

g) $12cm + 15km + 500m = ___ ?m$

$0.12m + 15000m + 500m = 15,500.12m$

$15\,km/h \times \frac{1000m}{1\,km/h} = 15000m$

$12cm \times \frac{1\ m}{100\ cm} = 0.12m$

h) $3in + 6ft + 4yd = ___ ?cm$

$3in \times \frac{2.54cm}{1\ in} = 7.62cm$

$6ft \times \frac{30.48cm}{1\ ft} = 182.88cm$

$4yd \times \frac{3\ ft}{1\ yd} \times \frac{12\ in}{1\ ft} \times \frac{2.54cm}{1\ in}$

$= 365.76cm$

2 a) L? 50mL

$$50\text{mL} \times \frac{10^{-3}\text{ L}}{1\text{ mL}} = 0.05\text{L}$$

b) s? 1 year

$$1\text{ yr} \times \frac{365\text{ d}}{1\text{ yr}} \times \frac{24\text{ hr}}{1\text{ d}} \times \frac{60\text{ min}}{1\text{ hr}} \times \frac{60\text{ s}}{1\text{ min}}$$

$$= 31536000\text{ s}$$

c) Kb? 4Gb

$$4\text{Gb} \times \frac{10^9\text{ b}}{1\text{ Gb}} = 4 \times 10^9 \text{ bites}$$

$$4 \times 10^9 \text{ bytes} \times \frac{1\text{ kb}}{1000\text{ b}} = 4 \times 10^6 \text{ kb}$$

d) $2d + 13min + 12hr = __?hr$

$48hr + 0.21\overline{6} + 12hr = 60.21\overline{6}hr$

$2d \times \frac{24hr}{1d} = 48hr$

$13min \times \frac{1\ hr}{60\ min} = 0.21\overline{6}\ hr$

3)a) m^2 ? $2km^2$

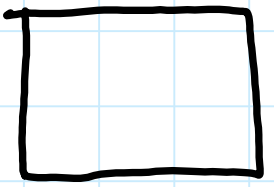
$$2\,km^2 \times \frac{1000\,m}{1\,km} \times \frac{1000\,m}{1\,km} = 2{,}000{,}000\,m^2$$

b) cm^3 ? $1m^3$

$$1m^3 \times \frac{100\,cm}{1\,m} \times \frac{100\,cm}{1\,m} \times \frac{100\,cm}{1\,m} = 1{,}000{,}000\,cm^3$$

$$1m^3 \times \frac{(100\,cm)^3}{(1\,m)^3} = 1{,}000{,}000\,cm^3$$

c) 300cm / 3km



cm^2 ?

$$3km \times \frac{100\,cm}{1\,m} = 300\,cm$$

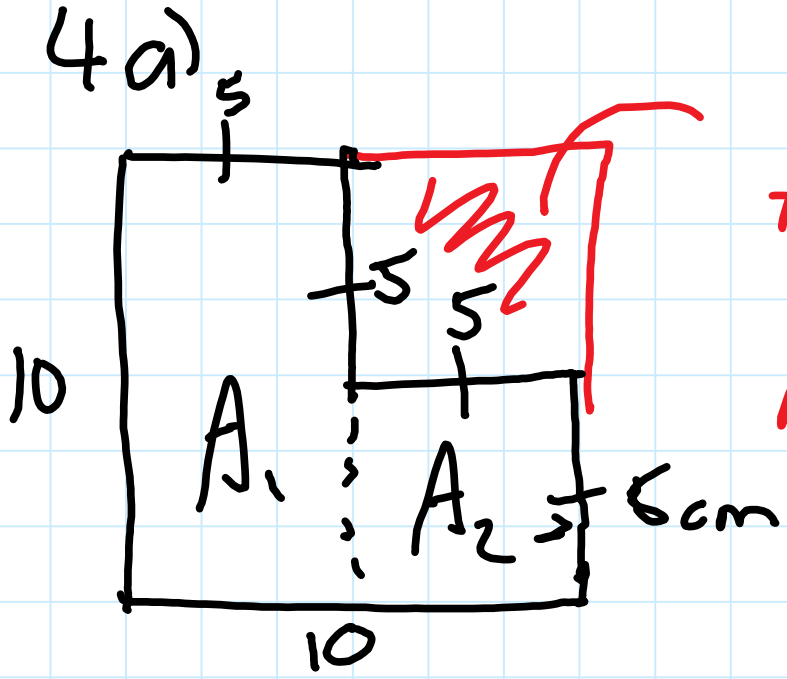
$A = LW$

$A = 300cm \times 200cm = 60{,}000\,cm^2$

d) cm^3?, $1ft^3$

$$\frac{1\,ft^3}{} \times \frac{2.54\,cm}{1\,ft} \times \frac{2.54\,cm}{1\,ft} \times \frac{2.54}{1\,ft} = 16.4\,cm^3$$

4 a)



$A = lw$
$= 10 \times 10 = 100 cm^2$

$A = 5 \times 5 = 25 cm^2$

$100 - 25 = 75 cm^2$

$P = 10 + 10 + 6 + 5 + 5 + 5 = 40 cm$

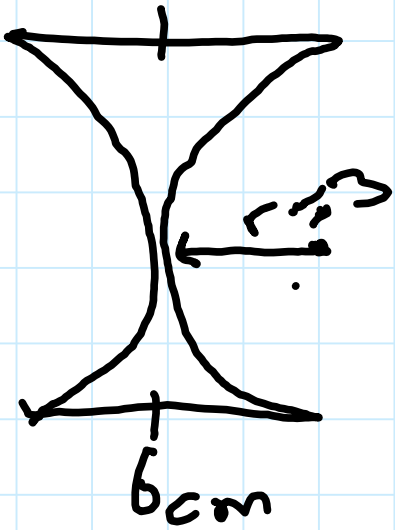
$A = LW$

$A_1 = LW$
$A_1 = 10(5) = 50 cm^2$

$A_2 = LW$
$= 5(5) = 25 cm^2$

$A_T = A_1 + A_2$
$= 50 + 25 =$
$A_T = 75 cm^2$

b)



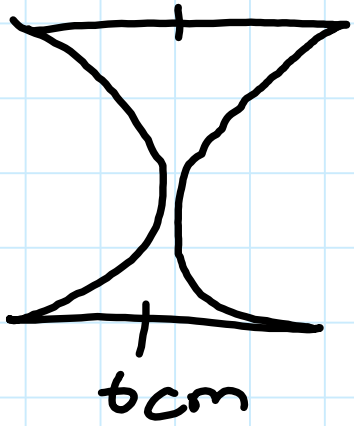
$P = 6 + 6 + 9.42 + 9.42 = 30.85\text{cm}$

$P = C = 2\pi r$

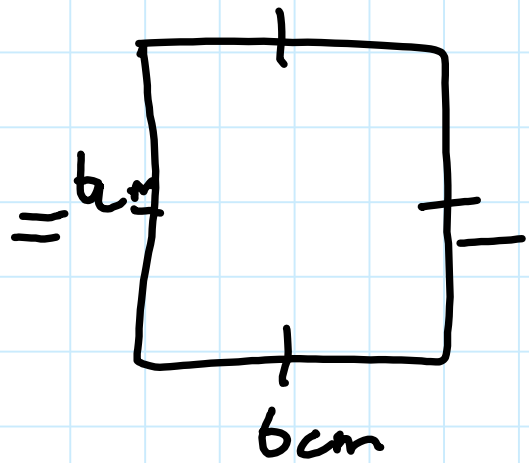
$C = 2\pi(3)$

$C = \frac{18.85\text{cm}}{2} = 9.42\text{cm}$

b)



=



$A = 36 - 28.27$

$= 7.73 cm^2$

$A = LW$

$A = 6(6)$

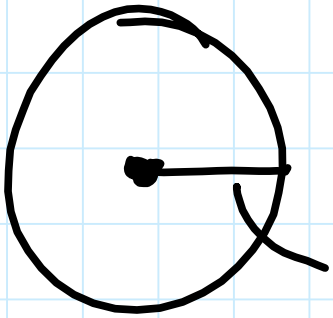
$A = 36 cm^2$

$A = \pi r^2$

$A = \pi(3)^2$

$A = 28.27 cm^2$

5a)



$200\frac{km}{hr}$

$6.38 \times 10^6 m$

$6.38 \times 10^6 \cancel{m} \times \frac{1\ km}{1000\ \cancel{m}} = 6.38 \times 10^3\ km$

$6380\ km$

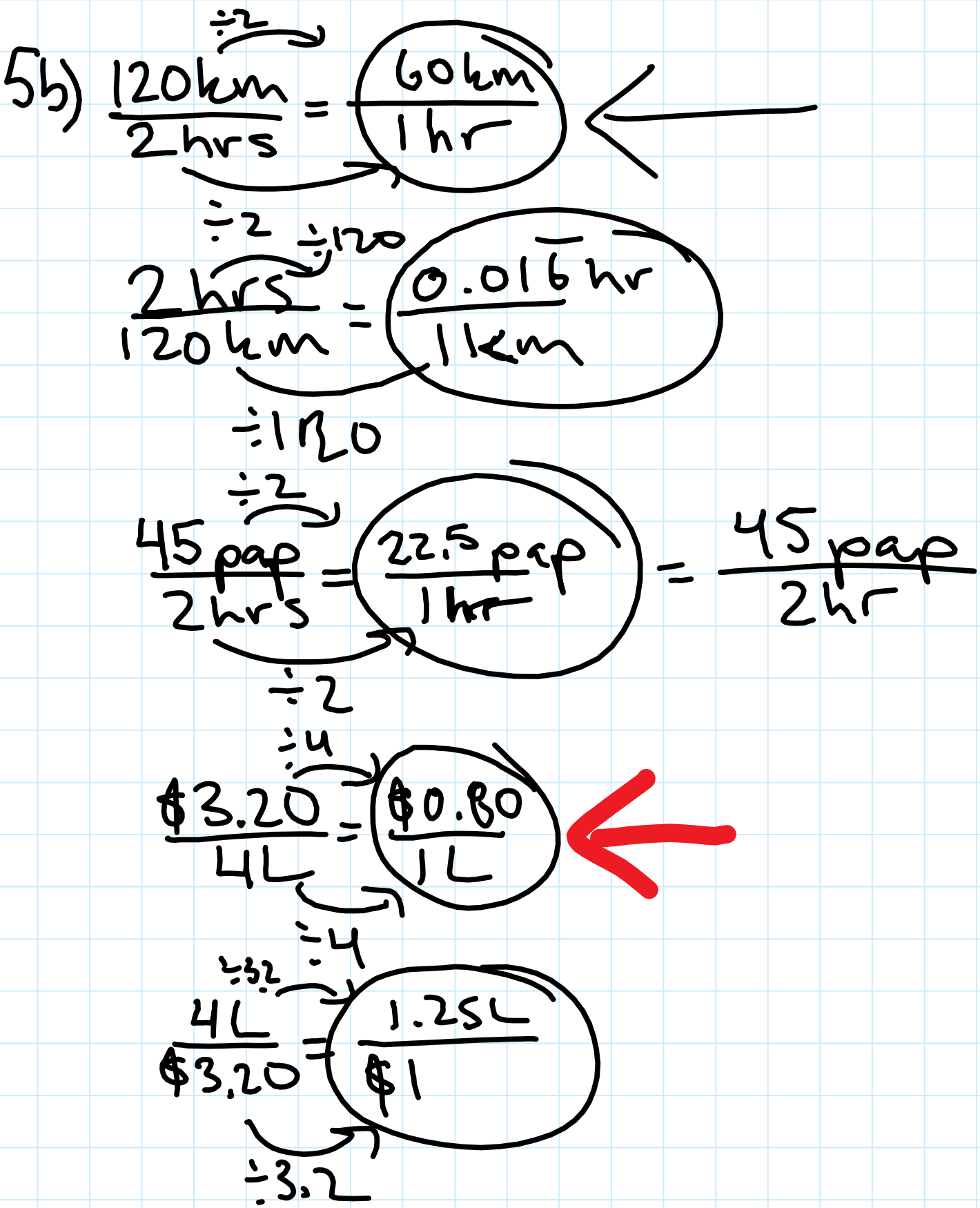
$C = 2\pi r$

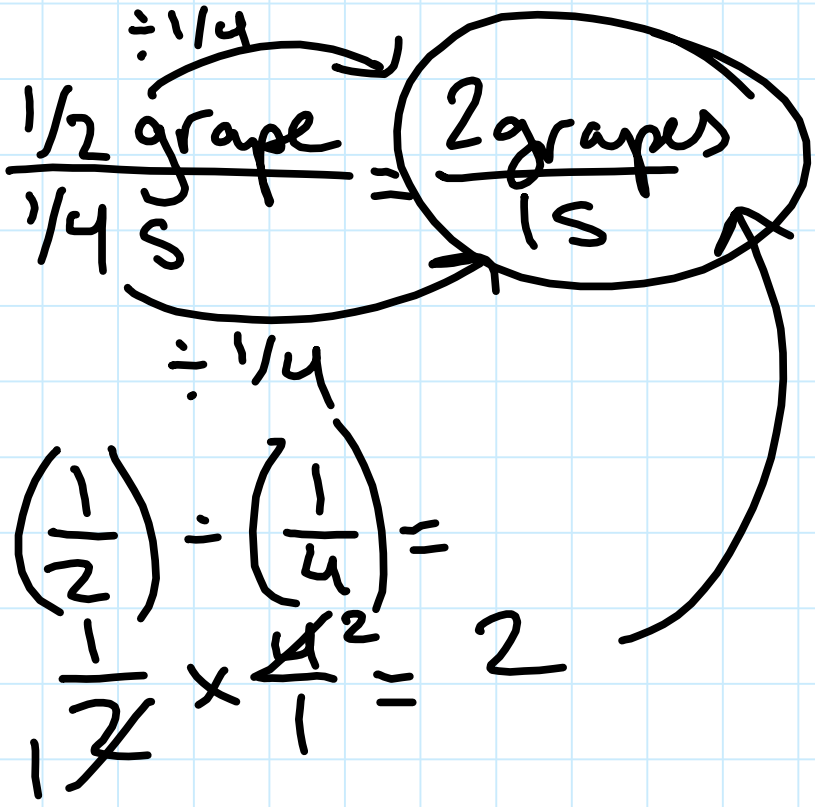
$C = 2\pi(6380)$

$C = 40086.7\ km$

$\frac{40086.7}{200} = 200.4$ X

$200.4\ hr$


5b)
÷2
120km / 2hrs = 60km / 1hr
÷2
÷120
2hrs / 120km = 0.016hr / 1km
÷10
÷2
45pap / 2hrs = 22.5pap / 1hr = 45pap / 2hr
÷2
÷4
$3.20 / 4L = $0.80 / 1L
÷4
÷3.2
4L / $3.20 = 1.25L / $1
÷3.2



$$\frac{\quad}{1}$$

5c) $100\frac{m}{s}$ in $\frac{km}{h}$

$$100m \times \frac{1\ Km}{1000m} = 0.1Km$$

$$1s \times \frac{1\ min}{60s} \times \frac{1\ hr}{60\ min} = 0.0002\overline{7}\ hr$$

$$\frac{0.1km}{0.0002\overline{7}hr} = 360\frac{km}{hr}$$

$\times 3.6$

$$\frac{100m}{s} = \frac{360Km}{hr}$$

$\div 3.6$

$$90\frac{Km}{h} = 25\frac{m}{s}$$

6) Ant 3mm

School bus 25ft

Pen 10cm

Megalodon Shark 60m.

Eiffel Tower 2000ft

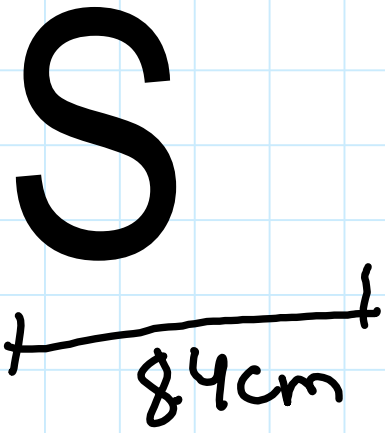
Mt. Everest 8000m

Distance to the moon 250,000km

Seconds in a week 1,000,000

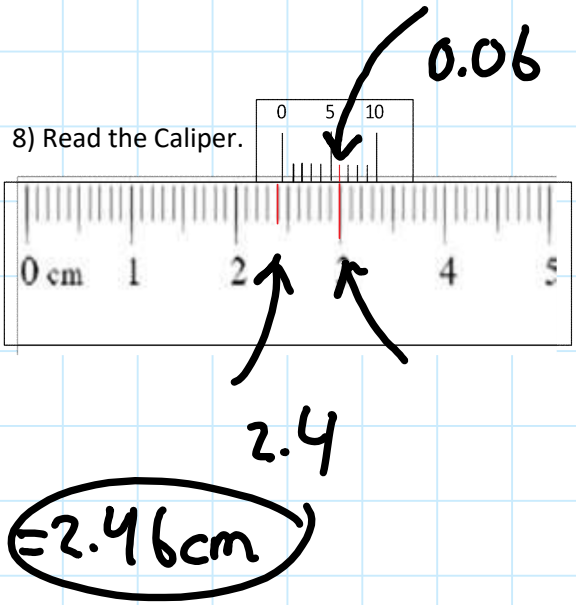
Nanoseconds in a minute 60,000,000,000

7) How long is the S:



8 4cm

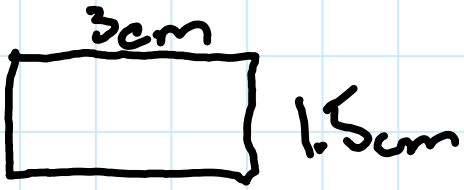
8) Read the Caliper.



=2.46cm

M10 - 1.0 - Measurement/Conversions/Ratios Review

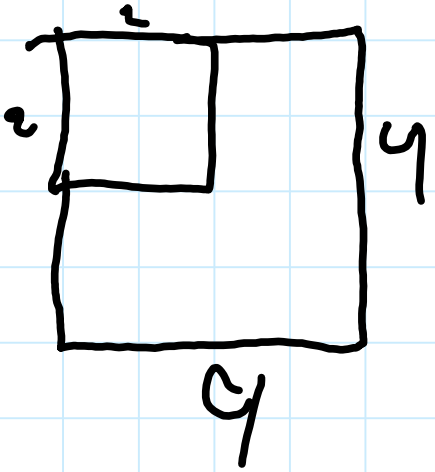
a)



$\frac{3}{1.5} : \frac{1.5}{1.5}$

$2 : 1$

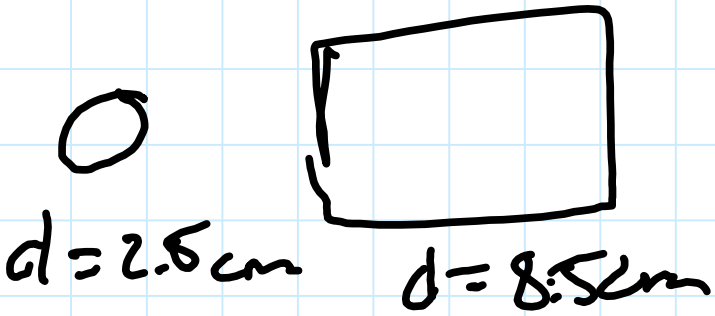
b)



$\frac{2}{2} : \frac{4}{2}$

$1 : 2$

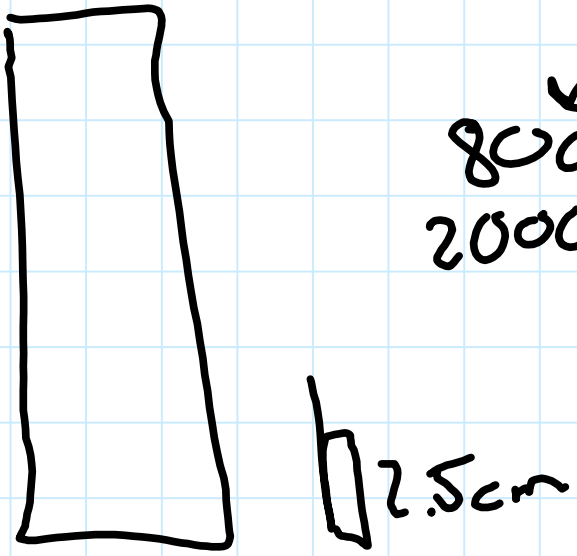
10)



$\frac{2.5}{.5} : \frac{8.5}{.5}$

5 : 17

11) 800 : 1



×800

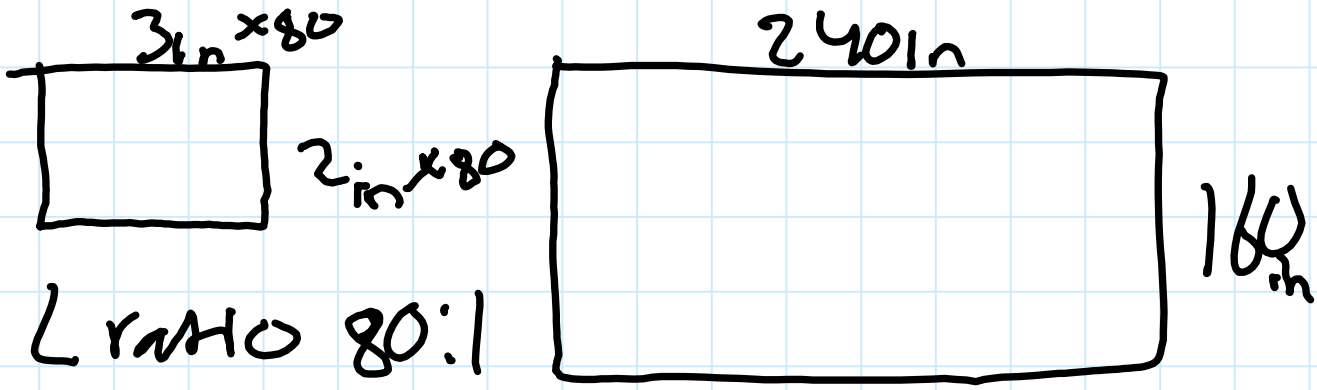
800 : 1

2000 : 2.5

÷800

= 2000 cm²

17)



Length ratio 80:1

$A = lw$

$A = 240(160)$

$= 38,400 in^2 \times \frac{(1\ ft)^2}{(12\ in)^2}$

$= 266.7 ft^2$

$A = lw$

$= 3(2)$

$= 6 in^2 \times \frac{(1\ ft)^2}{(12\ in)^2}$

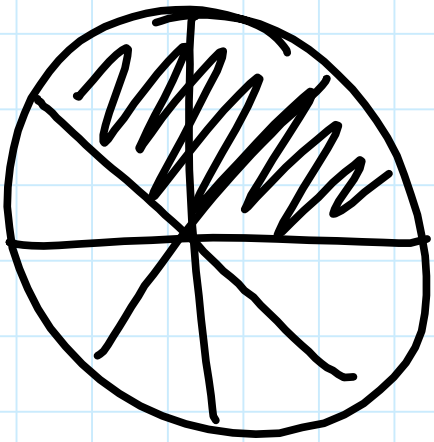
$= 0.0416 ft^2 \times 80$

$= 3.33 ft^2$

x4.5 → 12 cc : 1/2 cup → 54 cc : 2.25 cups ← x4.5

$\frac{1}{2} \times \frac{9}{2} = \frac{9}{4} =$ 2.25 cups $4.5 = 4\frac{1}{2} = \frac{9}{2}$

14)



3 + 5 = 8

3 : 8

15) 7B : 14 G : 21 T ← 21 − 7 = 14

×20 ↓ ×20

140B : 2806 : 420T

P:P P:T P:P:T

7B:14G 7B:21T 14G:21T

1B:2G 1B:3T 2G:3T

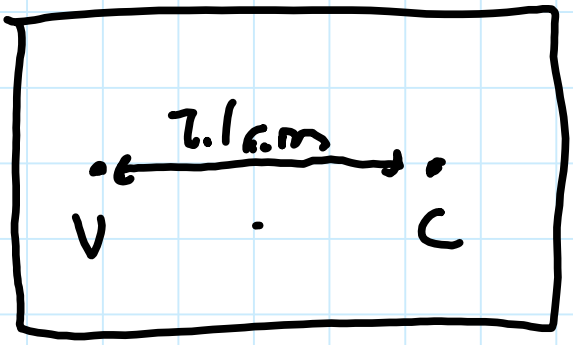
15b) 3R : 5B : 8 T 3+5=8

×7

21R : 35B : 56 T 21+35=56

3R:5B 3R:8T 5B:8T

16)



1 : 50,000,000

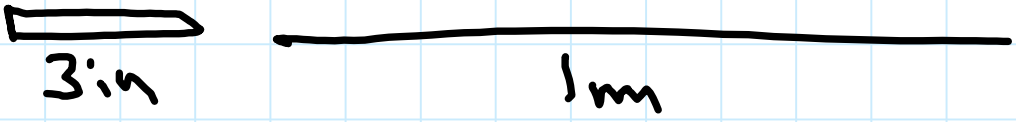
2.1 : 105,000,000

$\times 50{,}000{,}000$

$105{,}000{,}000\ cm \times \frac{1\ m}{100\ cm} \times \frac{1\ Km}{1000\ m}$

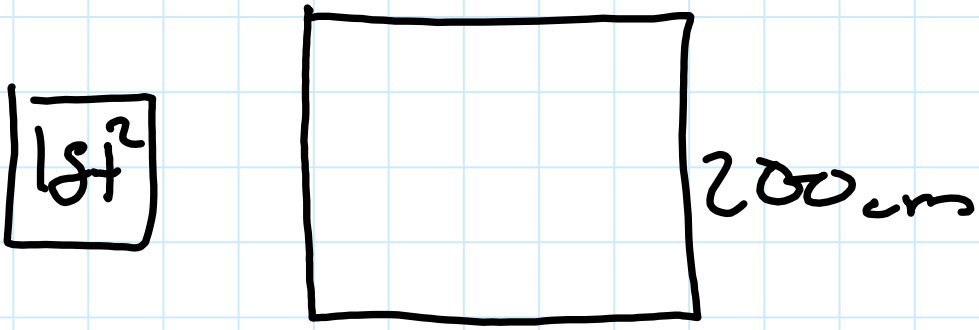
$= 1{,}050\ Km$

17a)



$$1\text{m} \times \frac{3.3\text{ft}}{1\text{m}} \times \frac{12\text{in}}{\text{ft}} = \frac{39.37\text{in}}{3\text{in}} = 13.1 \text{ pencils}$$

17b)



$$300\text{cm} \times \frac{1\text{ ft}}{30.48\text{ cm}} = 9.84\text{ ft}$$

$$200\text{cm} \times \frac{1\text{ ft}}{30.48\text{cm}} = 6.56\text{ ft}$$

$$A = LW$$
$$= (9.84)6.56$$
$$= 64.57\text{ ft}^2$$

64.57 (1 ft^2) into

17) 335mL? 4G

$$4G \times \frac{1\ L}{0.26\ G} = 15.38L$$

$$335mL \times \frac{1\ L}{1000\ mL} = 0.335L$$

$$\frac{15.38}{0.335} = 45.9 \text{ pop cans}$$

M10 - 1.0 - Measurement/Conversions/Ratios Review

7d) $4L : 200ft^2$

$__L : \underline{50}\ m^2$

$50m^2 \times \frac{3.3ft}{1m} \times \frac{3.3ft}{1m} = 544.5ft^2$

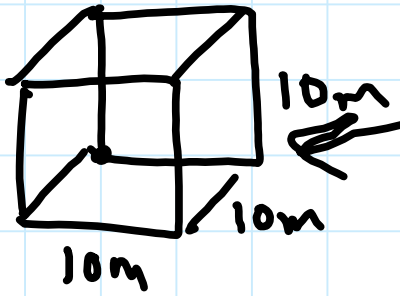
$\times 2.72$

$\frac{4L}{200ft^2} = \frac{10.89L}{544.5ft^2}$

$\times 2.72$

$10.8LL \rightarrow 50m^2$

18) ? L,



$10\text{m} \times \frac{100\text{cm}}{1\text{m}} = 1000\text{ cm}$

$V = lwh$

$V = 1000 \times 1000 \times 1000$

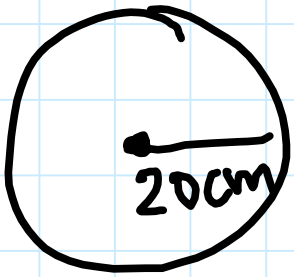
$V = 1{,}000{,}000{,}000\ \text{cm}^3$

$1\text{ cm}^3 = 1\text{ mL}$

$1{,}000{,}000{,}000\text{ mL}^3$

$1{,}000{,}000{,}000\text{ mL} \times \frac{1\text{ L}}{1000\text{ mL}} = 1{,}000{,}000\text{ L}$

19) V=?



$\frac{8 \text{ turns}}{1 \text{ s}}$ $\frac{1 \text{ min}}{}$

? TURNS

$C = 2\pi r$

$C = 2\pi(20)$

$C = 125.66 \text{ cm} \times 8 = 1005.3 \text{ cm}$

$V = \frac{1005.3 \text{ cm}}{1 \text{ s}}$

360°

$\frac{8 \text{ turns}}{\text{s}} \times 60 \text{ s} = 480 \text{ turns}$

$480 \text{ turns} \times 360° = 172{,}800°$