Measurement Unit Review Assignment:

Question 1 (Metric and Imperial Units and Referents) Section 1.1

1. ***Pick the most appropriate units (one imperial and one metric) to measure each object.***

a) The width of your desk. cm / inches

b) The diameter of a penny. mm / inches.

c) The length of a football field. m / yd

d) The thickness of a piece of paper. mm / inches

e) The distance between two major cities km / miles

Question 2 (Imperial Conversions)

Show your work!

a) Convert
43 feet = 14 yd. 1 ft.

b) Convert
6723 inches = 186 yd. 2 ft. 3 in.

- 6696
27 inches.

c) One of the tallest women in the world is De-Fen Yao. She is 93 in tall. How tall is she in feet and inches?

7ft. 9in

84in.

d) Janice is cutting 1'3" off a 7' board. After the cut, what is the length of the board in feet and inches?

6' 12"
1' 3"
5' 9"

e) Barbara is fencing a quarter mile of pasture on her farm. If she decides to use three strands of barbed wire, how many feet of wire will she need altogether?

$\frac{1}{4}$ mile x 3 = 0.75 mi

0.75 x 5280 = 3960 ft

Question 4 (Imperial – Metric Conversions)

a) Jack is 6'2". What is his height in centimeters?

① ft & in → in. ② in → cm.

① 6x12+2 = 74in.

② 74 x 2.54 ≈ 188 cm

b) Convert 3754 feet to kilometers

3754 ft → m → km

①

$$3754\,ft \times \frac{0.3048\,m}{1\,ft} = 1144.2192\,m$$

m → km

② 1144.2192 ÷ 1000

= 1.14 km

c) The distance from Victoria, BC to Halifax, NS is about 6185km. The distance from Albany, NY to San Francisco, CA is about 2980 miles. Which distance is greater? Support your answer.

change miles → km.

$2980\ \text{miles} \times \frac{1.609\text{km}}{1\ \text{mile}} \approx 4795\text{km}$

The distance from Victoria to Halifax is greater by about 1390 km.

d) Convert 5849m to an appropriate imperial measurement.

① $5849 \div 1000 = 5.849\text{km}$

② $5.849\text{km} \times \frac{1\text{mile}}{1.609\text{km}} = 3.64\text{ miles}$

e) Convert 33 mph to kilometres per hour. Round to the nearest whole number.

33mi → km $\quad 33\text{mi} \times \frac{1.609\text{km}}{1\text{mi}} \approx \boxed{53\text{ km}}$

f) Convert 3 yd. 1 ft. 8 in. to millimetres. Round to the nearest millimetre.

1in = 2.54cm
1in = 25.4mm

① convert to smallest units (inches) first.

$(3 \times 12) + (1 \times 12) + 8 = 56\text{in}$ (3 yds, 1 ft)

② convert inches → mm

$56\text{in} \times \frac{25.4\text{mm}}{1\text{in}} \approx \boxed{1422\text{mm}}$

g) Convert 6.72 m to inches. Round to the nearest inch.

① Convert 6.72m → cm

$6.72 \times 100 = 672\text{cm}$

② cm → in

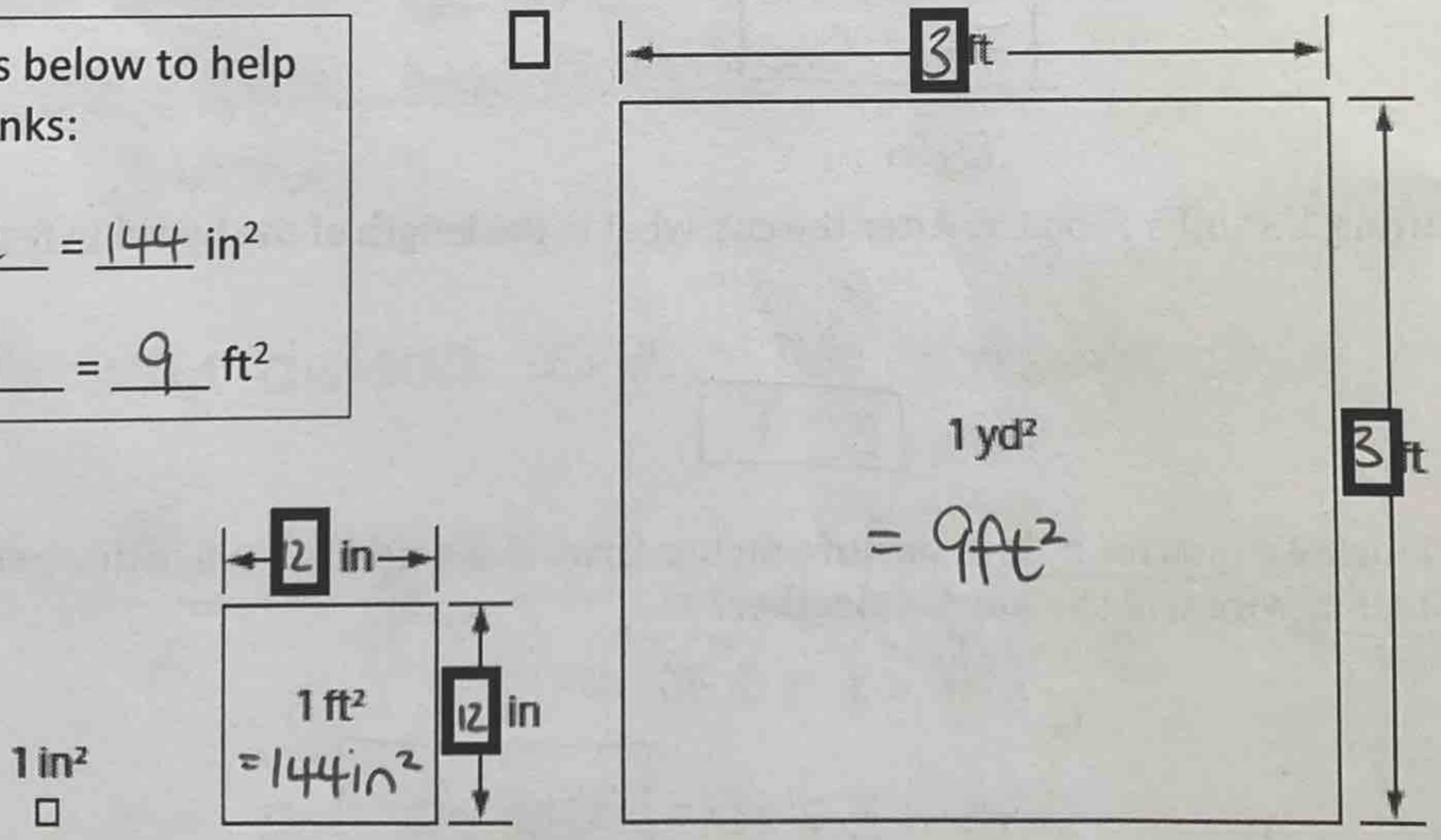
$672\text{cm} \times \frac{1\text{in}}{2.54\text{cm}} \approx \boxed{264\text{in}}$

Question 5 (Area Conversions)

Use the drawings below to help you fill in the blanks:

1 ft^2 = 12 x 12 = 144 in^2

1 yd^2 = 3 x 3 = 9 ft^2



$1cm^2 = 100mm^2$

$1m^2 = 10{,}000cm^2$

Use logic to figure out the answers to the following questions:

a) $5cm^2 = 500\ mm^2$ b) $50000cm^2 = 5\ m^2$ c) $1.75m^2 = 17500\ cm^2$

d) Convert 85 sq. in. to square centimetres. Round to the nearest tenth of square centimetre.

1in = 2.54cm

$1in^2 = 2.54 \times 2.54$

$1in^2 = 6.4516cm^2$

$85in^2 \times \frac{6.4516cm^2}{1in^2} \approx 548.4cm^2$

Question 6 (Area conversions)

Paula purchased a new home 1260 ft² in area. What is its area in square yards?

$1yd = 3ft$

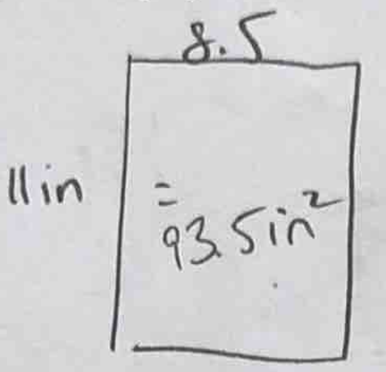
$1yd^2 = 3 \times 3$

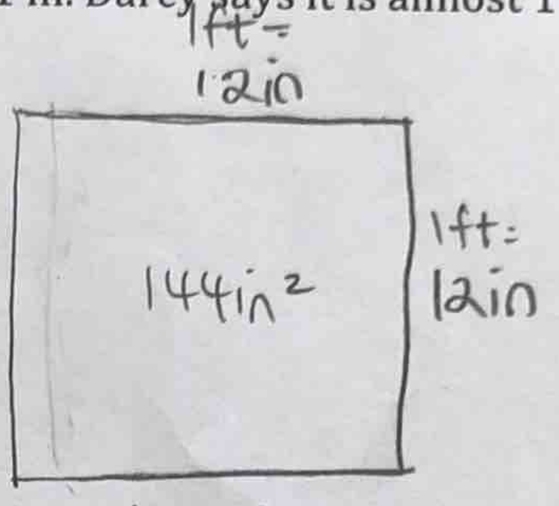
$= 9ft^2$

$1260ft^2 \times \frac{1yd^2}{9ft^2} = 140yd^2$

Question 7 (Area conversions)

A sheet of printer paper is 8.5 in × 11 in. Darcy says it is almost 1 ft². Is he correct? Explain your answer.





$1ft^2$ would be $144in^2$ which is nowhere near the $93.5in^2$ of a sheet of printer paper.

Question 8 (Scale Maps)

Using the map of BC from your notes package, find the distance between Atlin and Osoyoos (roughly the distance from the most northern point of BC to the most southern point). Find the distance to the nearest mile and km.

1 : 18,530,000

① Measure distance on map

Atlin → Osoyoos Map distance

5 inches

② convert map distance to real life distance using cross-multiplication

$$\frac{5}{x} \quad \frac{1}{18,530,000}$$

scale: map / real life

$x = 18,530,000(5)$

$= 92,650,000 in.$

③ convert in → ft → mi

$92650,000in \times \frac{1ft}{12in} = 7720833.\bar{3}ft.$

$7,720833.\bar{3}ft \times \frac{1mi}{5280ft} \approx \boxed{1462mi}$

④ convert to km

$1462mi \times \frac{1.609km}{1mi}$

$\approx 2353 km$