Wednesday, April 8

Intro to App & Pre-Cal Math 20S

Teacher: Mrs. Foxon Contact: See Contact Sheet

Welcome back to "school"! I hope you are all well and that you had a great Spring Break. It was gorgeous outside so that is where I spent most of my time. What did you do? I will continue to check in periodically to see how you are doing and if you need help. Please call/email me if you need anything.

Needed supplies:

- iWrite Math 10 Workbook *Formula Sheet inside back cover!
- scientific calculator
- pencil, eraser, highlighters
- Ruler

What needs to be handed in?

Some of you have been asking how to hand in your workbook questions. At this time, I am not collecting the Assignment questions. These are your practice questions, with answers and solutions, that you should be completing so that you can become an expert on each topic. Every week, you will get a separate hand-in assignment that I would like handed in by either uploading pics of each page in a Team chat, emailing pics, or placing it in my hand-in box in the front foyer of the school. It will be very clear in the instructions below what I want handed in and when.

Calendar:

Wednesday, April 8	**Measurement Hand-In Quiz #2** - Complete the *Measurement Quiz: Lessons 4 & 5* and hand in on Tuesday, April 14th. If you finish sooner, feel free to hand it in o by either uploading pics of each page in a Team chat, emailing pics/files, or placing in the hand-in box in the front foyer of the school.

Thursday, April 9	**Measurement Lesson #6** - Open your workbook to pg. 157 - Read the notes & complete your examples - Use my Teacher Notes to highlight new definitions and copy the examples into your workbook (pg. 157-161) - DO NOT DO Class Ex. #6 - Complete pg. 161 #1 - 5 - Use formula sheet inside back cover of book! - Use the Lesson 6 Solutions to check your answers and self-correct your work.
Friday, April 10	GOOD FRIDAY – NO SCHOOL!
Monday, April 13	**Continue working on Lesson #6**

Mrs. Foxon's Contact Info

Please do not hesitate to contact me during work hours if you have any questions!

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Home Phone: (431) 304-4161

Email: lfoxon@sunrisesd.ca

Microsoft Teams :

I have also set up a Microsoft Teams group that I have added each student to. Students can download the app on their phone. They will need to use their student email address to log in, which will be their first.lastname@stu.sunrisesd.ca and their password is the same password they use to log in to the computer at school. Teams can be accessed online as well. Go to https://www.office.com/ and click on Sign In. Use the same login information as stated above for the app. Once logged in, click on the Teams icon. On this app students will be able to see assignments and text me through this app if they have any questions or concerns.

Wednesday, April 8

Name: _____ /20 marks

Measurement Quiz: Lessons 4 & 5

Unit Conversions

Total Marks = 20

Note to Students: Have you made a Resource Sheet for this module? Do you have the definitions and formulas on your Resource Sheet? If so, you would be able to use it now. If not, now would be a good time to make one.

1. Convert the following: *(12 marks)*

750 mL =	_____	L
0.35 kg =	_____	g
77 in. =	_____	cm
5 gal. =	_____	L
66 531 ft. =	_____	mi.
3 yd. 2 in. =	_____	in.
2 $ft.^3$ =	_____	$in.^3$

2. A newborn baby boy weighs 3.5 kg. What is his mass in pounds? Explain how you can use mental math to determine whether your answer is reasonable. *(4 marks)*

3. The summit of Mount Everest is 8840 m above sea level. How many miles is this? *(4 marks)*

Thursday, April 9

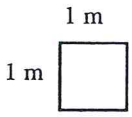
Teacher Notes

Measurement Lesson #6:

Conversion in the SI and Imperial Systems: Square Units & Cubic Units

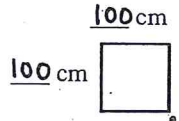
Investigation #1 *Conversions between Units of Area in the Metric System*

a) Calculate the area of the square in m^2.

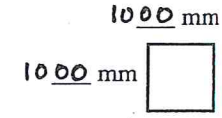


area $= 1\ m^2$

b) • Convert the sides of the square in a) to cm and mm and write them below.
• Calculate the area in cm^2 and mm^2.



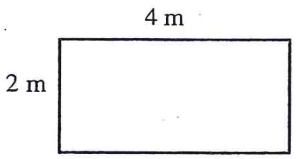
area $= 10000\ cm^2$



area $= 1000000\ mm^2$

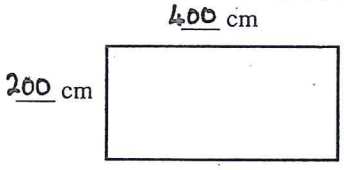
c) From a) and b) we can determine that $1m^2 =$ 10000 cm^2 and $1m^2 =$ 1000000 mm^2.

d) Calculate the area of the rectangle in m^2.

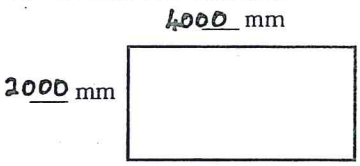


$A =$ 8 m^2

e) • Convert the sides of the rectangle in d) to cm and mm and write them below.
• Calculate the area in cm^2 and mm^2.



$A =$ 80000 cm^2



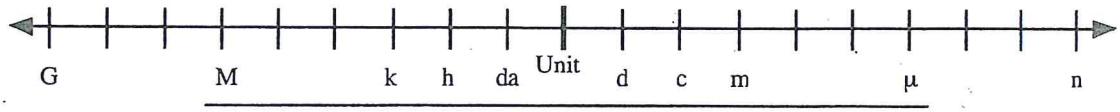
$A =$ 8 000 000 mm^2

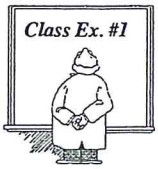
f) Use the ratios in c) to confirm the area of the rectangle in e) in cm^2 and mm^2.

$8(10000) = 80000\ cm^2$ $\quad$ $8(1000000) = 8000000\ mm^2$

g) Whereas length involves one dimension, area involves two dimensions. The area conversion between any two square units is the square of the length conversion between the linear units, e.g. to convert from km^2 to m^2 multiply by 1000×1000 or 1000^2. Converting 2.5 km to m, we multiply by 10^3. On the metric unit number line we move 3 places to the right and hence move the decimal point 3 places to the right in the conversion. 2.5 km = 2500 m.

Converting 2.5 km^2 to m^2, we multiply by $(10^3)^2 = 10^6$ and move the decimal point $3 \times$ 2 = 6 places to the right. 2.5 km^2 = 2 500 000 m^2





Convert the following. Express the answers in standard and scientific notation.

a) 12 m^2 to mm^2

$12 \times (10^3)^2\ mm^2$

$= 12 \times 10^6\ mm^2$

$= 12\,000\,000\ mm^2$

$= 1.2 \times 10^7\ mm^2$

b) 41 500 cm^2 to km^2

$41500 \times (10^{-5})^2\ km^2$

$= 41500 \times 10^{-10}\ km^2$

$= 0.00000415\ km^2$

$= 4.15 \times 10^{-6}\ km^2$

c) 389 275 km^2 to Mm^2

$389275 \times (10^{-3})^2\ Mm^2$

$= 389275 \times 10^{-6}\ Mm^2$

$= 0.389275\ Mm^2$

$= 3.89275 \times 10^{-1}\ Mm^2$

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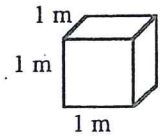
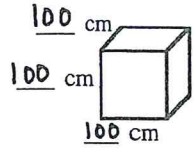
Investigation #2 *Conversions between Units of Volume in the Metric System*

a) Calculate the volume of the cube in m^3.



volume : $1 m^3$

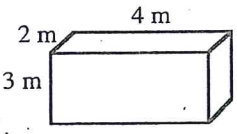
b) • Convert the sides of the cube in a) to cm and write them on the cube.
• Calculate the volume of the cube in cm^3.



volume : $1000000 cm^3$

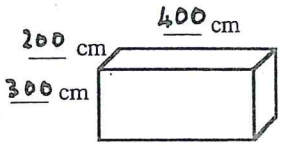
c) From a) and b) we can determine that $1m^3 =$ 1 000 000 cm^3.

d) Calculate the volume of the rectangular prism in m^3. (3)(2)(4)



volume : $24 m^3$

e) • Convert the sides of the rectangular prism in d) to cm.
• Write them on the diagram and calculate the volume in cm^3.



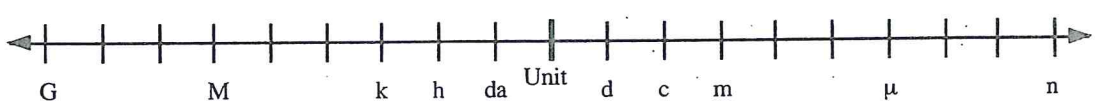
volume = (300)(200)(400) = $24000000 cm^3$

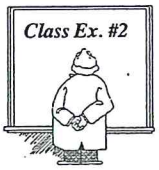
f) Use the ratios in c) to confirm the volume of the rectangular prism in e) in cm^3.

$24(1000000) = 24000000 cm^3$

g) Whereas length involves one dimension, volume involves three dimensions. The volume conversion between any two cubic units is the cube of the length conversion between the linear units, e.g. to convert from km^3 to m^3 multiply by $1000 \times 1000 \times 1000$ or 1000^3. Converting 1.6 km to m we multiply by 10^3 and on the metric unit number line we move 3 places to the right and hence move the decimal point 3 places to the right in the conversion. 1.6 km = 1600 m.

Converting 1.6 km^3 to m^3 we multiply by $(10^3)^3 = 10^9$ and move the decimal point $3 \times$ 3 = 9 places to the right. 1.6 km^3 = 1 600 000 000 m^3





Convert the following. Express the answers in standard and scientific notation.

a) 26 m^3 to mm^3

$26 \times (10^3)^3 mm^3$
$= 26 \times 10^9 mm^3$
$= 26\,000\,000\,000 mm^3$
$= 2.6 \times 10^{10} mm^3$

b) 9.84×10^{-6} km^3 to cm^3

$9.84 \times 10^{-6} \times (10^5)^3 cm^3$
$9.84 \times 10^{-6} \times 10^{15} cm^3$
$= 9\,840\,000\,000 cm^3$
$= 9.84 \times 10^9 cm^3$

c) 389 200 cm^3 to μm^3

$389200 \times (10^4)^3 \mu m^3$
$= 389200 \times 10^{12} \mu m^3$
$= 389200000000000000 \mu m^3$
$= 3.892 \times 10^{17} \mu m^3$

Complete Assignment Questions #1 - 2

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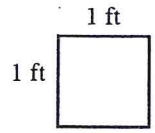
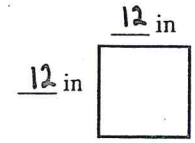
Investigation #3 — *Conversions between Units of Area in the Imperial System*

a) Calculate the area of the square in ft^2.



area = $1\ ft^2$

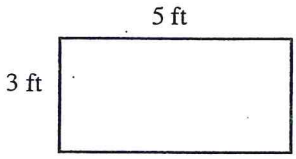
b) • Convert the sides of the square in a) to inches and write them below.
• Calculate the area in in^2.



area = $144\ in^2$

c) From a) and b) we can determine that $1ft^2 =$ 144 in^2.

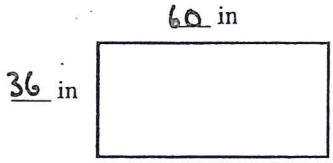
d) Calculate the area of the rectangle in ft^2.



area = (3)(5)
= $15\ ft^2$

$A =$ 15 ft^2

e) • Convert the sides of the rectangle in d) to inches and write them below.
• Calculate the area in in^2.



area = (36)(60)
= $2160\ in^2$

$A =$ 2160 in^2

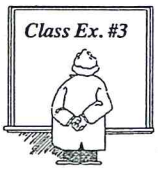
f) Use the ratios in c) to confirm the area of the rectangle in e) in in^2.

area = 15 (144) = $2160\ in^2$

g) From the patterns in a) - f), we can see that to convert between units of area in the imperial system we follow the same process as in the metric system - we multiply/divide by the <u>square</u> of the corresponding linear conversion factor.

For example to convert from square yards to square feet we multiply by $(3)^2$. or 9

To convert from square inches to square feet we multiply by $\left(\frac{1}{12}\right)^2$ or $\frac{1}{144}$ or divide by $(12)^2$. or 144



Convert the following measurements.

a) 15 yd^2 to ft^2 **b)** 10 841 600 yd^2 to $mile^2$

$\frac{15}{1} yd^2 \times \frac{(3)^2 ft^2}{(1)^2 yd^2} = 135\ ft^2$

$\frac{10841600}{1} yd^2 \times \frac{(1)^2 mi^2}{(1760)^2 yd^2} = 3.5\ mi^2$

c) 450 in^2 to $mile^2$ (Answer in scientific notation to 3 decimal places)

$\frac{450}{1} in^2 \times \frac{(1)^2 ft^2}{(12)^2 in^2} \times \frac{(1)^2 mi^2}{(5280)^2 ft^2} = 1.121 \times 10^{-7}\ mi^2$

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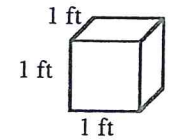
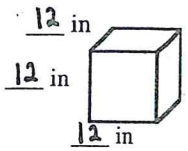
Investigation #4 — *Conversions between Units of Volume in the Imperial System*

a) Calculate the volume of the cube in ft^3.



volume = $1\ ft^3$

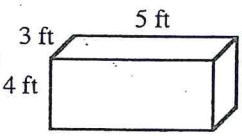
b) • Convert the sides of the cube in a) to inches and write them on the cube.
• Calculate the volume of the cube in in^3.



volume $= (12)^3 = 1728\ in^3$

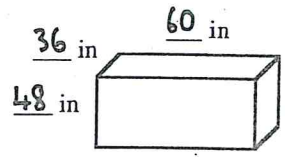
c) From a) and b) we can determine that $1\ ft^3 =$ 1728 in^3.

d) Calculate the volume of the rectangular prism in ft^3.



volume $= (4)(3)(5)$
$= 60\ ft^3$

e) • Convert the sides of the rectangular prism in d) to inches. and write them on the diagram.
• Calculate the volume of the rectangular prism in in^3.



volume $= (48)(36)(60)$
$= 103680\ in^3$

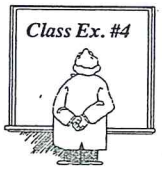
f) Use the ratios in c) to confirm the volume of the rectangular prism in e) in in^3.

volume $= 60(1728) = 103680\ in^3$

g) From the patterns in a) - f), we can see that to convert between units of volume in the imperial system we follow the same process as in the metric system - we multiply/divide by the cube of the corresponding linear conversion factor.

$1\ yd = 3\ ft = 36\ in$

For example, to convert from cubic yards to cubic inches we multiply by $(36)^3$.
To convert from cubic yards to cubic miles we divide by $(1760)^3$.



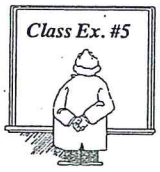
Convert the following measurements.

a) 233 280 in^3 = 5 yd^3

$\frac{233280}{1}\ in^3 \times \frac{(1)^3}{(36)^3}\ yd^3$

b) 40.5 ft^3 = 1.5 yd^3

$\frac{40.5}{1}\ ft^3 \times \frac{(1)^3}{(3)^3}\ yd^3$



Convert 5 cubic miles into cubic inches. Answer in scientific notation to two decimal places.

$\frac{5}{1}\ mi^3 \times \frac{(5280)^3}{(1)^3}\ ft^3 \times \frac{(12)^3}{(1)^3}\ in^3 = 1.27 \times 10^{15}\ in^3$

Complete Assignment Questions #3 - #5

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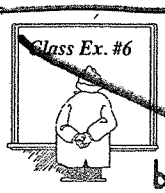
Lesson 6 Solutions



A box in the shape of a rectangular prism measures 0.8 m by 0.6 m by 0.6 m. A second box measures 2.5 ft by 2 ft by 2 ft. Using the conversion 2.54 cm = 1 in,

a) determine, to the nearest cm^3, which box has the greater volume and by how much.

box 1: $V = (0.8)(0.6)(0.6) = 0.288\ m^3$ $\quad \frac{0.288\ m^3}{1} \times \frac{(100)^3\ cm^3}{(1)^3\ m^3} = 288000\ cm^3$

box 2: $V = (2.5)(2)(2) = 10\ ft^3$ $\quad \frac{10\ ft^3}{1} \times \frac{(12)^3\ in^3}{(1)^3\ ft^3} \times \frac{(2.54)^3\ cm^3}{(1)^3\ in^3} = 283168\ cm^3$

$288000 - 283168 = 4832$ $\quad$ First box has greater volume by $4832\ cm^3$

b) determine, to the nearest in^2, which box has the greater surface area and by how much.

box 1: $SA = 4(0.8 \times 0.6) + 2(0.6 \times 0.6) = 2.64\ m^2$

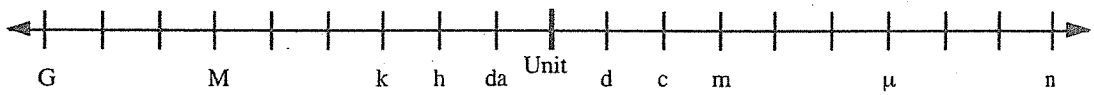
box 2: $SA = 4(2.5 \times 2) + 2(2 \times 2) = 28\ ft^2$ $\quad \frac{28\ ft^2}{1} \times \frac{(12)^2\ in^2}{(1)^2\ ft^2} = 4032\ in^2$

$\frac{2.64\ m^2}{1} \times \frac{(1)^2\ ft^2}{(0.3048)^2\ m^2} \times \frac{(12)^2\ in^2}{(1)^2\ ft^2} = 4092\ in^2$ $\quad 4092 - 4032 = 60$

First box has greater surface area by $60\ in^2$

Complete Assignment Questions #6 - 18

Assignment



1. Convert the following to the indicated measurements.

a) $53\ m^2 =$ 530 000 cm^2

$53 \times (10^2)^2 = 53 \times 10^4$

b) $1326\ mm^2 =$ 13.26 cm^2

$1326 \times (10^{-1})^2 = 1326 \times 10^{-2}$

c) $890\ 000\ mm^2 =$ 0.89 m^2

$890000 \times (10^{-3})^2 = 890000 \times 10^{-6}$

d) $0.611\ km^2 =$ 611000 m^2

$0.611 \times (10^3)^2 = 0.611 \times 10^6$

e) $78\ cm^3 =$ 78000 mm^3

$78 \times (10)^3$

f) $0.003\ 58\ cm^2 =$ 0.358 mm^2

$0.00358 \times (10)^2$

g) $92\ 400\ m^3 =$ 0.000 0924 km^3

$92400 \times (10^{-3})^3 = 92400 \times 10^{-9}$

h) $0.07\ m^3 =$ 70 000 000 mm^3

$0.07 \times (10^3)^3 = 0.07 \times 10^9$

i) $415\ cm^3 =$ 0.000 415 m^3

$415 \times (10^{-2})^3 = 415 \times 10^{-6}$

j) $415\ m^3 =$ 415 000 000 cm^3

$415 \times (10^2)^3 = 415 \times 10^6$

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2. Convert the following to the indicated measurements. Answer in scientific notation.

a) $2.1\ m^2 =$ 2.1×10^{-6} km^2

$2.1 \times (10^{-3})^2$

$= 2.1 \times 10^{-6}$

b) $0.289\ km^2 =$ 2.89×10^{9} cm^2

$0.289 \times (10^{5})^2$

$= 0.289 \times 10^{10}$

c) $7\,450\ mm^2 =$ 7.45×10^{-3} m^2

$7450 \times (10^{-3})^2$

$= 7450 \times 10^{-6}$

d) $0.37\ km^3 =$ 3.7×10^{8} m^3

$0.37 \times (10^{3})^3$

$= 0.37 \times 10^{9}$

e) $50\,000\ Mm^2 =$ 5×10^{-2} Gm^2

$50000 \times (10^{-3})^2$

$= 50000 \times 10^{-6}$

f) $920\ mm^2 =$ 9.2×10^{14} nm^2

$920 \times (10^{6})^2$

$= 920 \times 10^{12}$

g) $0.289\ km^2 =$ 2.89×10^{-13} Gm^2

$0.289 \times (10^{-6})^2$

$= 0.289 \times 10^{-12}$

h) $2.14 \times 10^4\ mm^2 =$ 2.14×10^{10} μm^2

$2.14 \times 10^{4} \times (10^{3})^2$

$= 2.14 \times 10^{4} \times 10^{6}$

i) $560\,000\ \mu m^3 =$ 5.6×10^{-4} mm^3

$560000 \times (10^{-3})^3$

$= 560000 \times 10^{-9}$

j) $780\ cm^3 =$ 7.8×10^{-1} dm^3

$780 \times (10^{-1})^3$

780×10^{-3}

3. Convert the following to the indicated measurements.

a) $720\ in^2 =$ 5 ft^2

$\frac{720}{1}\ \cancel{in^2} \times \frac{(1)^2\ ft^2}{(12)^2\ \cancel{in^2}} = 5$

b) $0.5\ mi^2 =$ 1 548 800 yds^2

$\frac{0.5}{1}\ \cancel{mi^2} \times \frac{(1760)^2\ yds^2}{(1)^2\ \cancel{mi^2}} = 1548800$

c) $8\,145\ ft^2 =$ 905 yds^2

$\frac{8145\ \cancel{ft^2}}{1} \times \frac{(1)^2\ yds}{(3)^2\ \cancel{ft^2}} = 905$

d) $4.2\ ft^2 =$ 604.8 in^2

$\frac{4.2\ \cancel{ft^2}}{1} \times \frac{(12)^2\ in^2}{(1)^2\ \cancel{ft^2}} = 604.8$

e) $7\ mi^2 =$ 195 148 800 ft^2

$\frac{7\ \cancel{mi^2}}{1} \times \frac{(5280)^2\ ft^2}{(1)^2\ \cancel{mi^2}} = 195148800$

f) $123\,904\ yds^2 =$ 0.04 mi^2

$\frac{123904\ yds^2}{1} \times \frac{(1)^2\ mi^2}{(1760)^2\ yds^2} = 0.04$

g) $3.5\ yds^2 =$ 4536 in^2

$\frac{3.5}{1}\ \cancel{yds^2} \times \frac{(3)^2\ \cancel{ft^2}}{(1)^2\ \cancel{yds^2}} \times \frac{(12)^2\ in^2}{(1)^2\ \cancel{ft^2}} = 4536$

h) $1\,944\ in^2 =$ 1.5 yds^2

$\frac{1944\ \cancel{in^2}}{1} \times \frac{(1)^2\ \cancel{ft^2}}{(12)^2\ \cancel{in^2}} \times \frac{(1)^2\ yds^2}{(3)^2\ \cancel{ft^2}} = 1.5$

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4. Convert the following to the indicated measurements.

a) 7.1 ft^3 to in^3

$\frac{7.1\ ft^3}{1} \times \frac{(12)^3\ in^3}{(1)^3\ ft^3}$

$= 12\,268.8\ in^3$

b) 5.4 ft^3 to yds^3

$\frac{5.4\ ft^3}{1} \times \frac{(1)^3\ yds^3}{(3)^3\ ft^3}$

$= 0.2\ yds^3$

c) 0.05 $miles^3$ to yds^3

$\frac{0.05\ mi^3}{1} \times \frac{(1760)^3\ yds^3}{(1)^3\ mi^3}$

$= 272\,588\,800\ yds^3$

d) 24 yds^3 to ft^3

$\frac{24\ yds^3}{1} \times \frac{(3)^3\ ft^3}{(1)^3\ yds^3}$

$= 648\ ft^3$

e) 1 123.2 in^3 to ft^3

$\frac{1123.2\ in^3}{1} \times \frac{(1)^3\ ft^3}{(12)^3\ in^3}$

$= 0.65\ ft^3$

f) 2 yds^3 to in^3

$\frac{2\ yds^3}{1} \times \frac{(3)^3\ ft^3}{(1)^3\ yds^3} \times \frac{(12)^3\ in^3}{(1)^3\ ft^3}$

$= 93\,312\ in^3$

5. Convert the following to the indicated measurements. Answer in scientific notation to 2 decimal places.

a) 24.5 ft^2 to mi^2

$\frac{24.5\ ft^2}{1} \times \frac{(1)^2\ mi^2}{(5280)^2\ ft^2}$

$= 8.79 \times 10^{-7}\ mi^2$

b) 440 yds^3 to mi^3

$\frac{440\ yds^3}{1} \times \frac{(1)^3\ mi^3}{(1760)^3\ yds^3}$

$= 8.07 \times 10^{-8}\ mi^3$

c) 60 yds^2 to in^2

$\frac{60\ yds^2}{1} \times \frac{(3)^2\ ft^2}{(1)^2\ yds^2} \times \frac{(12)^2\ in^2}{(1)^2\ ft^2}$

$= 7.78 \times 10^{4}\ in^2$

d) 24.5 ft^3 to yds^3

$\frac{24.5\ ft^3}{1} \times \frac{(1)^3\ yds^3}{(3)^3\ ft^3}$

$= 9.07 \times 10^{-1}\ yds^3$

e) 78.9 in^3 to ft^3

$\frac{78.9\ in^3}{1} \times \frac{(1)^3\ ft^3}{(12)^3\ in^3}$

$= 4.57 \times 10^{-2}\ ft^3$

f) 0.4 mi^2 to in^2

$\frac{0.4\ mi^2}{1} \times \frac{(5280)^2\ ft^2}{(1)^2\ mi^2} \times \frac{(12)^2\ in^2}{(1)^2\ ft^2}$

$= 1.61 \times 10^{9}\ in^2$

Use the Conversion Factor 2.54 cm = 1 in for the remainder of this assignment.

X 6. A rectangular mat measures 90 cm by 60 cm. Calculate, to the nearest whole number, the area of the mat in each of the following:

a) square centimetres

area = (90)(60)

$= 5400\ cm^2$

b) square inches

$\frac{5400\ cm^2}{1} \times \frac{(1)^2\ in^2}{(2.54)^2\ cm^2}$

$= 837\ in^2$

c) square feet

$\frac{837\ in^2}{1} \times \frac{(1)^2\ ft^2}{(12)^2\ in^2}$

$= 6\ ft^2$

X 7. A storage container in the shape of a rectangular prism measures 4.8 m by 3 m by 2.5 m. A second storage container measures 15 ft by 12 ft by 7 ft.

a) Determine, to the nearest ft^3, which container has the greater volume, and by how much.

container 1 : $V = (4.8)(3)(2.5) = 36\ m^3$

$\frac{36\ m^3}{1} \times \frac{(1)^3\ ft^3}{(0.3048)^3\ m^3} = 1271.3\ldots\ ft^3$

container 2 : $V = (15)(12)(7) = 1260\ ft^3$

$1271.3\ldots - 1260 = 11.3\ldots$

The first container has a greater volume by 11 ft^3.

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b) Determine, to the nearest cm^2, which container has the greater surface area, and by how much.

container 1: $SA = 2(4.8 \times 3) + 2(3 \times 2.5) + 2(4.8 \times 2.5) = 67.8\ m^2$

container 2: $SA = 2(15 \times 12) + 2(12 \times 7) + 2(15 \times 7) = 738\ ft^2$

$67.8\ m^2 \times \frac{(100)^2\ cm^2}{(1)^2\ m^2} = 678\,000\ cm^2$ $\quad 738\ ft^2 \times \frac{(0.3048)^2\ m^2}{(1)^2\ ft^2} \times \frac{(100)^2\ cm^2}{(1)^2\ m^2} = 685\,624.4\ldots\ cm^2$

The second container has greater surface area by $7264\ cm^2$

Use the following information to answer the next two questions.

> A 2.5 km stretch of road is to be paved. The road is 14 m wide and is to be filled to a depth of 8 cm.

8. Determine, to the nearest cubic metre, the volume of material used in paving this road.

2.5 km = 2500 m

8 cm = 0.08 m

volume = (2500)(14)(0.08)

= $2800\ m^3$

9. The material to be used to pave the road costs \$3.50 per ft^3. Using 1 in = 2.54 cm, determine the cost of paving material for this road to the nearest hundred dollars.

$2800\ m^3 \times \frac{(100)^3\ cm^3}{(1)^3\ m^3} \times \frac{(1)^3\ in^3}{(2.54)^3\ cm^3} \times \frac{(1)^3\ ft^3}{(12)^3\ in^3} = 98881.06\ldots\ ft^3$

Cost = \$3.50 × 98881.06... = \$346 100

Answer Key

1. **a)** 530 000 **b)** 13.26 **c)** 0.89 **d)** 611 000 **e)** 78 000
f) 0.358 **g)** 0.000 092 4 **h)** 70 000 000 **i)** 0.000 415 **j)** 415 000 000

2. **a)** 2.1×10^{-6} **b)** 2.89×10^{9} **c)** 7.45×10^{-3} **d)** 3.7×10^{8} **e)** 5×10^{-2}
f) 9.2×10^{8} **g)** 2.89×10^{-13} **h)** 2.14×10^{10} **i)** 5.6×10^{-4} **j)** 7.8×10^{-1}

3. **a)** 5 **b)** 1 548 800 **c)** 905 **d)** 604.8
e) 195 148 800 **f)** 0.04 **g)** 4536 **h)** 1.5

4. **a)** 12 268.8 **b)** 0.2 **c)** 272 588 800 **d)** 648 **e)** 0.65 **f)** 93 312

5. **a)** 8.79×10^{-7} **b)** 8.07×10^{-8} **c)** 7.78×10^{4}
d) 9.07×10^{-1} **e)** 4.57×10^{-2} **f)** 1.61×10^{9}

6. **a)** 5400 cm^2 **b)** 837 in^2 **c)** 6 ft^2

7. **a)** Container 1 = 1271.3 ft^3, Container 2 = 1260 ft^3. Container 1 is greater by 11 ft^3.
b) Container 1 = 678 000 cm^2, Container 2 = 685 624 cm^2, Container 2 is greater by 7624 cm^2

8. 2800 m^3 **9.** \$346 100

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