Fractions are important!!!!!

GMF 10   Name_____

Adding and Subtracting Fractions   Date_____

Evaluate each expression.

1) $1\frac{1}{2} - \left(-1\frac{1}{2}\right)$ 2) $\left(-1\frac{5}{6}\right) - 2\frac{2}{3}$

3) $2\frac{5}{6} - 2\frac{2}{3}$ 4) $3 - \left(-1\frac{3}{4}\right)$

5) $1\frac{7}{8} + \left(-2\frac{1}{4}\right)$ 6) $\left(-\frac{5}{3}\right) - \left(-\frac{2}{3}\right)$

7) $\left(-1\frac{1}{4}\right) - \left(-3\frac{1}{4}\right)$ 8) $\left(-3\frac{4}{7}\right) - \left(-\frac{1}{2}\right)$

9) $\left(-\frac{5}{3}\right) + 3\frac{3}{4}$ 10) $\left(-1\frac{4}{5}\right) - \left(-3\frac{1}{6}\right)$

Sep 1-12:15 AM

Fractions are important!!!!!

11) $(-1) - \frac{3}{8}$ 12) $\frac{5}{6} - 2\frac{2}{5}$

13) $\left(-1\frac{1}{5}\right) - \left(-2\frac{1}{2}\right)$ 14) $\left(-3\frac{4}{5}\right) - \left(-\frac{9}{8}\right)$

15) $4\frac{6}{7} - 1\frac{2}{7}$ 16) $3\frac{1}{3} - \left(-3\frac{3}{4}\right)$

17) $\left(-1\frac{3}{4}\right) + \left(-\frac{8}{5}\right)$ 18) $(-6) - \left(-3\frac{2}{5}\right)$

19) $\left(-1\frac{5}{6}\right) + \left(-1\frac{2}{3}\right)$ 20) $\frac{3}{2} - 3\frac{3}{8}$

Sep 1-12:28 AM

Answers to Adding and Subtracting Fractions

1) 3   2) $-4\frac{1}{2}$ 3) $\frac{1}{6}$ 4) $4\frac{3}{4}$

5) $-\frac{3}{8}$ 6) $-1\frac{4}{15}$ 7) 2   8) $-3\frac{1}{14}$

9) $2\frac{1}{12}$ 10) $1\frac{11}{30}$ 11) $-1\frac{3}{8}$ 12) $-1\frac{17}{30}$

13) $1\frac{3}{10}$ 14) $-2\frac{27}{40}$ 15) $3\frac{4}{7}$ 16) $7\frac{1}{12}$

17) $-3\frac{7}{20}$ 18) $-2\frac{3}{5}$ 19) $-3\frac{1}{2}$ 20) $-1\frac{7}{8}$

Sep 1-12:36 AM

Warm Up

$\div 10$	$\div 10$	$\div 10$	$\div 10$	$\div 10$	$\div 10$	
km	hm	dam	m	dm	cm	mm
kilo	hecto	deca	meter	deci	centi	milli

x 10   x 10   x 10   x 10   x 10   x 10

1) Complete the following:

(a) 20 hg = _2000_ g   (b) 425 km = _4 250 000_ dm
                                            _4 250 000_

(c) 324 cm = _3.24_ m   (d) 45 hl = _4.5_ kl

(e) 6 mm = _0.6_ cm   (f) 79 dl = _____ dal

(g) 2500 g = _____ kg   (h) 1234 ml = _____ l

(i) 6 kl = _____ dal   (j) 1500 dm = _____ m

Jan 29-8:19 PM

Warm Up

1) Complete the following:

(a) 20 hg = _____ g   (b) 425 km = _____ dm

(c) 324 cm = _____ m   (d) 45 hl = _____ kL

(e) 6 mm = _____ cm   (f) 79 dl = _____ dal

(g) 2500 g = _____ kg   (h) 1234 ml = _____ L

(i) 6 kl = _____ dal   (j) 1500 dm = _____ m

Jan 29-8:19 PM

Chapter 4

System of Measurement and Conversions
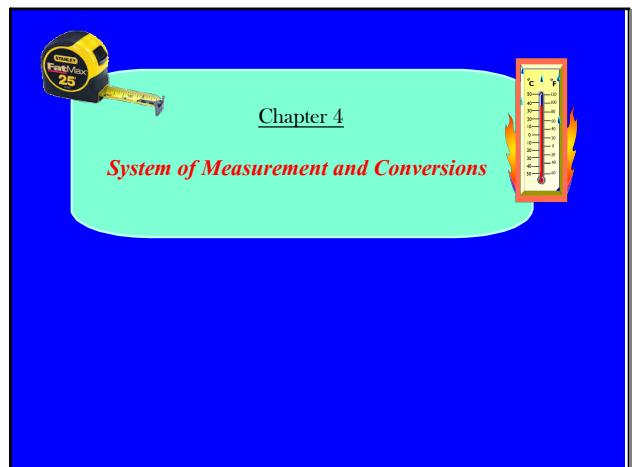
Jan 25-5:31 PM

If you are driving 100 kilometers per hour:

How fast are you driving in miles per hour?

approximately: *60 mph*

If you are driving 100 miles per hour:

How fast are you driving in kilometers per hour?

approximately: *160 km/h*

Jan 25-6:21 PM

If it is 20 degrees Celsius:

What is the temperature in degrees Fahrenheit?

approximately: *70°*

If it is 20 degrees Fahrenheit:

What is the temperature in degrees Celsius?

approximately: *-5°*

Jan 25-6:31 PM

We did the approximate value for the pervious two examples however we will learn how to calculate the exact values using conversion formulas.

Jan 25-6:43 PM

Activate Prior Learning:
SI Units

Common SI units of length are the:

Kilometre, Metre, Centimetre, and Millimetre.

What are referents for these SI units?

Unit	Referent
Kilometre (km)	distance you could comfortably in 15 minutes
Metre (m)	width of a door
Centimetre (cm)	width of little finger
Millimetre (mm)	thickness of a dime

Jan 25-7:01 PM

Systeme international d'unites (SI)

This is a measurement system commonly used in Canada. It is a decimal system based on multiples of 10. This means you can convert to other SI units simply by multiplying or dividing by a multiple of 10!

SI PREFIX	SI SYMBOL	SI UNIT CONVERSION FACTOR (STANDARD FORM)	FACTOR (POWER)	FACTOR LANGUAGE
tera	T	1 terametre = 1 000 000 000 000 metres	10^{12}	trillion
giga	G	1 gigametre = 1 000 000 000 metres	10^{9}	billion
mega	M	1 megametre = 1 000 000 metres	10^{6}	million
kilo	k	1 kilometre = 1 000 metres	10^{3}	thousand
hecto	h	1 hectometre = 100 metres	10^{2}	hundred
deca	da	1 decametre = 10 metres	10^{1}	ten
		1 metre = 1 metre	10^{0}	one
deci	d	1 decimetre = 0.1 metres	10^{-1}	tenth
centi	c	1 centimetre = 0.01 metres	10^{-2}	hundredth
milli	m	1 millimetre = 0.001 metres	10^{-3}	thousandth
micro	μ	1 micrometre = 0.000 001 metres	10^{-6}	millionth
nano	n	1 nanometre = 0.000 000 001 metres	10^{-9}	billionth
pico	p	1 picometre = 0.000 000 000 001 metres	10^{-12}	trillionth
femto	f	1 femtometre = 0.000 000 000 000 001 metres	10^{-15}	quadrillionth

A list of prefixes is given in the chart above. The basic unit of "metres" is used in the chart. Please note that the prefixes "kilo", "hecto", "centi" and "milli" are used very frequently (light blue); the prefixes "mega", "deca", "deci" and "micro" are used less frequently (light red), while the remaining prefixes (light purple) are rarely used (other than for extremely large or small numbers in science).

Jan 25-6:45 PM

SI also uses **base units**. The base unit for measuring length is the **meter (m)** and the base unit for measuring volume is the **litre (L)**. What is the base unit for measuring mass?

Sep 4-2:25 PM

2

TABLE 1.5   Selected Prefixes Used in the Metric System

Prefix	Abbreviation	Meaning	Example	
Giga	G	10^9	1 gigameter (Gm)	$= 1 \times 10^9$ m
Mega	M	10^6	1 megameter (Mm)	$= 1 \times 10^6$ m
Kilo	k	10^3	1 kilometer (km)	$= 1 \times 10^3$ m
Deci	d	10^{-1}	1 decimeter (dm)	$= 0.1$ m
Centi	c	10^{-2}	1 centimeter (cm)	$= 0.01$ m
Milli	m	10^{-3}	1 millimeter (mm)	$= 0.001$ m
Micro	μ^a	10^{-6}	1 micrometer (μm)	$= 1 \times 10^{-6}$ m
Nano	n	10^{-9}	1 nanometer (nm)	$= 1 \times 10^{-9}$ m
Pico	p	10^{-12}	1 picometer (pm)	$= 1 \times 10^{-12}$ m
Femto	f	10^{-15}	1 femtometer (fm)	$= 1 \times 10^{-15}$ m

^{a}This is the Greek letter mu (pronounced "mew").

Sep 4-2:31 PM

Grade 7

Review

SI Units of Measurement

Length

km	hm	dam	m	dm	cm	mm
kilo	hecto	deca	meter	deci	centi	milli

Weight (mass)

| kg | hg | dag | g | dg | cg | mg |

Liquid Volume

| kl | hl | dal | L | dl | cl | ml |

How do you change from one unit to another?

To change to the unit beside it, either multiply or divide by 10. If the unit is to the right, multiply, if the unit is to the left you divide.

| km | hm | dam | m | dm | cm | mm |
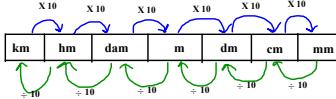
Complete the following:

(a) 20 m = _____cm   (b) 321 dag = _____kg
(c) 72 cm = _____mm   (d) 82 hl = _____L
(e) 600 mm = _____m   (f) 250 ml = _____dl
(g) 5000 mg = _____dg   (h) 3589 m = _____km
(i) 62 kl = _____dal   (j) 15 dm = _____m

Mar 24-12:16 PM

Jan 25-7:25 PM
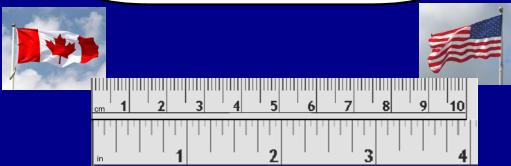
Imperial System

This is a measurement system commonly used in the United States and United Kingdom on a daily basis, however, **Imperial units** are still used in many industries in Canada even though we have adopted the metric system.

The **imperial system** is *not* a decimal system as the measurements were all developed at different times to meet certain needs. Therefore, you must use a **conversion factor** to convert one

FIGURE 4.1

Some Common Imperial Units

Length	
Unit	Abbreviation
inch	in or ″
foot	ft or ′
yard	yd
mile	mi

5'4"

Jan 25-6:45 PM

Imperial Conversions

We will be working with units for length. The smallest unit we will use is the inch, followed by a foot, followed by a yard, and finally a mile. Read the top of page 143 and then copy and complete the table below.

IMPERIAL CONVERSION TABLE

1 foot = _____ inches

1 yard = _____ feet = _____ inches

1 mile = _____ yards = _____ feet

Sep 6-10:39 AM

| Imperial Unit	Abbreviation	Referent	Relationship between Units
Inch	in.	Thumb length	
Foot	ft.	Foot length	1 ft. = 12 in.
Yard	yd.	Arm span	1 yd. = 3 ft. 1 yd. = 36 in.
Mile	mi.	Distance walked in 20 min	1 mi. = 1760 yd. 1 mi. = 5280 ft.

Sep 6-7:35 PM

DISCUSSION...

Which imperial unit is the most appropriate
unit to measure each item? Justify your choice.

a) the height of your desk
b) the thickness of a mattress
c) the width of a car
d) the length of a flat panel TV
e) the distance from the school to your home

1.1 Imperial Measures of Length

Exercise #3

To measure the length of an object, first determine the smallest indicated
unit by counting the number of divisions between two adjacent inch marks.
The ruler below has ? divisions between two adjacent inch marks

$\frac{1}{16}$ $3\frac{7}{16}$
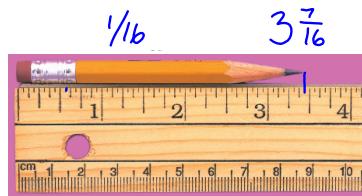
The pencil point is closest to ?   ?

A fraction of an imperial measure of length is usually written in fraction form,
not decimal form.

1.1 Imperial Measures of Length

Key Concepts, p. 2

$32\frac{26}{32}$ $32\frac{13}{16}$

Sep 4-3:10 PM

Factor Labeling Method

Example: Convert 136 inches to feet

$$136 \text{ in.} \times \frac{1 \text{ ft.}}{12 \text{ in.}} = \frac{136 \text{ in.}}{1} \times \frac{1 \text{ ft.}}{12 \text{ in.}}$$

$$= \frac{136 \text{ in.}}{1} \times \frac{1 \text{ ft.}}{12 \text{ in.}}$$

$$= \frac{136}{12} \text{ ft.}$$

$$= 11\frac{4}{12} \text{ ft.}$$

Jan 25-8:53 PM

Example 1   **Converting between Imperial Units**

a) Convert 5 yd. to:
   i) feet   ii) inches

b) Convert 51 in. to:
   i) feet and inches   ii) yards, feet, and inches

✓ **SOLUTION**

CHECK YOUR UNDERSTANDING

1.1 Imperial Measures of Length

Example 1

Example 1   **Converting between Imperial Units**

a) Convert 5 yd. to:
   i) feet   ii) inches

b) Convert 51 in. to:
   i) feet and inches   ii) yards, feet, and inches

SOLUTION

a) i) Since 1 yd. = 3 ft., to convert yards to feet multiply
     by 3.

     5 yd. = 5(3 ft.)

     5 yd. = 15 ft.

   ii) Since 5 yd. = 15 ft. and 1 ft. = 12 in., to convert feet
      to inches multiply by 12.

     5 yd. = 15(12 in.)

     5 yd. = 180 in.

(Solution continues.)

1.1 Imperial Measures of Length

Example 1 Solution, p. 1

Example 1   Converting between Imperial Units

b) i) Since 12 in. = 1 ft., to convert inches to feet, divide by 12.

51 in. = $\frac{51}{12}$ ft.   Write this improper fraction as a mixed number.

51 in. = $4\frac{3}{12}$ ft.

51 in. = 4 ft. 3 in.

ii) 51 in. = 4 ft. 3 in.

Since 3 ft. = 1 yd.

4 ft. = 1 yd. 1 ft.

and 51 in. = 1 yd. 1 ft. 3 in.

CHECK YOUR UNDERSTANDING

1.1 Imperial Measures of Length

Example 1 Solution, p. 2

Class/ Homework

Assignment:
Measuring in an Imperial System

Due tomorrow FIRST of class

Jan 25-8:25 PM

Sep 4-2:04 PM

Attachments

Assignment - Measuring in an Imperial System.pdf

Day 1_adding and Subtracting Fractions.ks-ipa