Student Workbook & Tool Kit

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Student Workbook

Iglopuk, an Inuit entrepreneur from Gnome, Alaska, took a cab from the Miami airport to the Everglades. When he jumped in the cab, it was a blazing 98 degrees inside! The cabbie apologized for the heat but confessed that his air conditioner had been broken for a week. Without skipping a beat, Iglopuk opened his bag and flipped on the air conditioner he'd made out of an old VCR, baling wire and a used A/B switch. By the time the cab reached the Everglades, it was 32 degrees cooler inside the cab than it had been at the airport. What temperature was it inside the cab when they got to the Everglades?

2 Practice Problem #3

Nevil the Rat knows that there are 37 treats on the third shelf of the bookcase. As a sensible rat, he loves treats, food, and just about anything he can put in his mouth and digest. After three days of failed attempts, he is finally able to get to the third shelf by climbing up the pile of laundry to the chair, the chair to the windowsill, and, with nothing more than a dangerous lateral leap, to the shelf and his prize. Hungry from his climb, Nevil promptly consumes 18 of the treats until he is discovered, scolded and put back in his cage. How many treats are left for Nevil's next excursion?

Shopping Spree

Practice Problem #1

Seth and Maggie could not believe they had spent the entire morning collecting golf balls. Seth thought the golfers at Cataract Country Club must be the worst golfers on the planet. Maggie agreed that they couldn't hit the broad side of a barn with a softball…let alone a golf ball. When they returned home, they sorted the golf balls they had found. Seth put 7/8 of the golf balls into a box on the upper shelf. Maggie took 1/3 of the remaining golf balls and put them in a basket to sell at their Lemonade/Used Golf Ball Stand, and left the rest in a bucket in the garage. Later that afternoon, Mary Ellen stopped by their stand for a glass of lemonade and some used golf balls. As luck would have it, she needed 6 golf balls and that's exactly how many golf balls Maggie had in her basket. How many golf balls total did Seth and Maggie find that day?

Hint: What fraction of the golf balls did Seth put in the closet?
So what fraction can you use to represent *all* of the golf balls?
And then, what fraction remained?
What fraction of the remaining golf balls did Maggie take?…which is equal to how many golf balls?
So then, if Maggie has so many golf balls (which equals a certain fraction), what fraction is equal to *all* of the golf balls?

Horse Thief

Practice Problem #5

At high noon, Ethan jumped on his Hogley Favoriteson motorcycle and began the 40 mile journey from Frogtown to Podunk. At the exact same time, Noah mounted his trusty steed, Buttercup, and left Podunk and heads toward Frogtown. If Ethan travels at 30 miles per hour and Noah squeezes 6 miles per hour out of Buttercup, how far apart will they be at 12:30 p.m.?

Tool Kit

Units, Measurements and Conversions

Volume

The standard unit of volume in the **metric system** is the *liter* (L or l)[1]. One liter is equal to 1000 cubic centimeters in volume. Other units of volume and their equivalent to 1 liter are as follows:

$1\ L = 1000\ cm^3$

1000 milliliters (mL) = 1 liter	or	1 milliliter (mL) = 0.001 liter
100 centiliters (cL) = 1 liter		1 centiliter (cL) = 0.01 liter
10 deciliters (dL) = 1 liter		1 deciliter (dL) = 0.1 liter

1 kiloliter (kL) = 1000 liters

From these units, we see that 1000 milliliters equal 1 liter; so 1 milliliter equals 1 cubic centimeter in volume. For reference, 1 liter is a little more than 1 quart. One teaspoon equals about 5 milliliters.

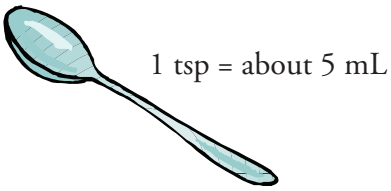
In the **standard system**, volume is measured by the *gallon* (gal.).

1 gal. = 4 quarts (qt.)

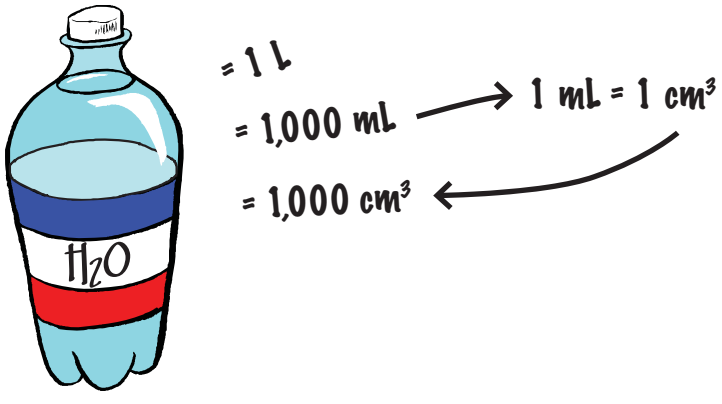
1 quart = 2 pints (pt.)

1 pint = 2 cups (cp.)

To convert between systems:				
If you know…		Multiply by:	To find…	
gal.	gallons	3.785	liters	L
L	liters	0.264	gallons	gal.



1 tsp = about 5 mL



1. Did you know that both the lowercase *l* and the uppercase *L* are accepted abbreviations for liters? However, to avoid confusion with the number 1, we'll use the abbreviation L throughout this program.