Vancouver Community College

Learning Centre — Math

Bakers' Math *by Alison Woods*

Conversions Between Imperial and Metric

Converting between **imperial** and **metric** measurements is a skill that bakers must have, since Canada and the United States use two different systems.

Most Canadian packages are given in metric units, but many recipes are in imperial units.

Converting between the two systems almost always requires the use of fractions. Review the fraction rules if you're having trouble.

Here are the most common conversions. The measurement at the top of each column is equal to the measurements listed underneath it:

MASS / WEIGHT

Imperial to metric

1 lb	1 oz (dry)
0.454 kg	28.4 g
454 g	

Metric to imperial

1 kg	1 g
2.2 lb	0.035 oz
35.2 oz	

(The dry ounce (oz) is a measurement of weight . The wet ounce or fluid ounce (fl. oz) is a measurement of volume.)

LENGTH

Imperial to metric

1 yd	1 ft	1 in
0.91 m	0.3 m	2.54 cm
91 cm	30 cm	

Metric to imperial

1 m	1 cm
1.09 yd	0.39 in
39 in	

VOLUME / CAPACITY

Imperial to metric

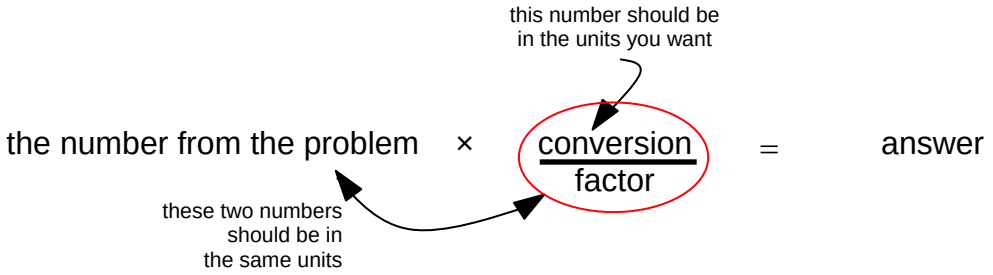
1 gallon	1 quart	1 pint	1 cup	1 fluid ounce	1 tablespoon	1 teaspoon
3. 8 L 3785 mL	0.95 L 946 mL	0.47 L 473 mL	0.24 L 236 mL	30 mL	15 mL	4.9 mL

Metric to imperial

1 Liter	1 milliliter
0.26 gallon	0.03 fluid ounce
1.1 quart	0.07 tablespoon
2.1 pints	0.20 teaspoon
4.2 US cups	
34 fluid ounces	

*****1 g = 1 mL**** for all liquids with a similar density to water (e.g. milk, cream, eggs)

To use these conversions, set up a problem like below:



Example 1: Convert 2 lbs, 3 oz to grams.

Answer: First, get all the imperial measurement into the same unit. *(See the worksheet on Imperial system for review if needed)*
1 lb = 16 oz

$2\ lbs = 32\ oz$
$32\ oz + 3\ oz = 35\ oz$

Now convert 35 oz to grams using the conversion factor from the weight table.
We go to the dry ounce column (1 oz) and find the gram equivalent.

1 oz = 28.4 g

the number from the problem	×	conversion factor	=	answer
$35oz$	×	$\frac{28.4g}{1oz}$	=	994 g

Practice Problems

Practice converting from imperial to metric.

	3 lbs	=	1.36	kg
1.	2.2 lbs	=		kg
2.	1 ¾ lbs	=		g
3.	4 ¼ (dry) oz	=		g
4.	10 ft	=		m
5.	2 yd	=		m
6.	¾ yd	=		cm
7.	3 ¾ ft	=		cm
8.	10 in	=		cm
9.	10 gallons	=		L
10.	½ quart	=		mL
11.	3.5 pints	=		mL
12.	2 ¾ cups	=		L
13.	3 tablespoons	=		mL
14.	10 teaspoons	=		mL
15.	3 ¼ (wet) ounces	=		mL

Practice converting from metric to imperial.

16.	288 g	=		oz
17.	0.5 kg	=		oz
18.	1.20 kg	=		lbs
19.	3 m	=		yd
20.	2.5 m	=		in
21.	10 cm	=		in
22.	½ L	=		gal
23.	100 mL	=		fl. oz.
24.	2 ¾ L	=		cups
25.	10 mL	=		teaspoons
26.	2.1 L	=		fl. oz.
27.	20 mL	=		tablespoons
28.	1.5 L	=		quarts
29.	3 L	=		pints

30. The recipe that Jim is making calls for 260 mL of raisins. He only has measuring cups, tablespoons and teaspoons in the kitchen. How should he measure out the raisins needed?
31. To make a coffee syrup, Natalie needs 6 ½ fl oz water, ¾ oz instant coffee, and 3 ¼ oz sugar. What is the total weight of the syrup recipe in grams before boiling?
32. Sam has a raw dough 1 yd long and he wants to bake sandwich loaves that are 30 cm in length. How many sandwich loaves can he make? (assume the dough length increases by a factor of 0.4 when baked) If he wanted to bake loaves that are 16 inches in length instead, how many could he make?

Answers

1. 0.999 kg
2. 794.5 g
3. 120.7 g
4. 3 m
5. 1.8 m
6. 68.3 cm
7. 112.5 cm
8. 25.4 cm
9. 38 L
10. 473 ml
11. 1655.5 ml
12. 0.66 L
13. 45 mL
14. 49 mL
15. 97.5 mL
16. 10.08 oz
17. 17.6 oz
18. 2.64 lbs
19. 3.27 yd
20. 97.5 in
21. 3.9 in
22. 0.13 gallon
23. 3 fluid ounces
24. 11.55 cups
25. 2 teaspoons
26. 71.4 ounces
27. 1.4 tablespoons
28. 1.65 quarts
29. 6.3 pints
30. 1 cup, 1 Tbsp and 2 tsp of raisins
31. 308.6 grams
32. 4 sandwich loaves 30 cm long or 3 sandwich loaves 16 inches long