VIU Culinary Arts
Assessment Review and Practice Test

- ✓ 2 hours (approximately)
- ✓ You may use a calculator
- ✓ Conversion tables are provided
- ✓ Successful candidates **may** be invited for an informal interview (by telephone or face-to-face) with an instructor from the Culinary Arts Program

_____

The Culinary Arts Assessment consists of three (3) sections. Students are required to score 70% on sections A and B. Please note – Section C – Writing Skills will NOT be graded.

Section A

- Reading Comprehension
  - You will be asked to read a short passage and answer 6 questions about the text.

Section B

- Math Skills

  - The math section includes word problems that relate to recipes (formulae) and food preparation:

    - Converting between similar units of measurement

    - Metric measurement of mass (e.g. grams, kilograms) and volume (litres, millilitres)

    - Imperial measurement of mass (ounces, pounds) and volume (cups, fluid ounces)

    - How to convert from imperial to metric units

    - How to convert recipes to serve fewer or more portions (using ratio and proportion)

  - There is also a section of general calculations such as conversions, addition, subtraction, multiplication, division (whole numbers, fractions and decimals), percentages and converting temperature from Fahrenheit to Celsius (and vice versa)

Section C

- Writing Skills
  - The Culinary Arts Program and careers in this field) typically require unsociable hours and the ability to work in a high pressure environment. Motivation and excellent team skills are essential.

    - The writing skills section of the assessment poses questions designed to evaluate your writing skills, but also, even more importantly, your interest in and commitment to the Culinary Arts Program. Topics include:

      - Why you are interested in the program
      - Experience of cooking
      - Career goals
      - Work ethic/study skills

Culinary Arts and Professional Baking and Pastry Arts Assessment – Practice Test

For Culinary Arts – required score is 70% average. For Professional Baking – required score is 70% in sections A & B.

.

SECTION A – Reading Comprehension

Section A

Read the following text and answer the questions.

Slow cookers are a simple, no-nonsense solution to making delicious meals for a family on the go. With minimal prep time, you can walk away and let the slow cooker work its magic - welcoming you home to an aromatic, ready-to-serve dinner. Here are some tips for slow cooker success:

Brown your meat before you heat. The extra few minutes you take to do so will greatly enhance the flavor of your meal. If you dredge your meat in a little flour before browning, you'll also get a thicker sauce. While some foods will brown during the cooking process, they won't have the same color and flavor they get when browned first on the stovetop. If you can find the time for this step, the results are worth it.

Prioritize your ingredients. Hardy, fresh vegetables such as carrots, potatoes, or turnips for example, cook more slowly than meat. To avoid undercooking these types of veggies, place them on the bottom or sides and the meat on top. Add tender veggies (peas) and strongly flavored veggies like broccoli, cauliflower or onions in the last 15 to 60 minutes. Dairy products like sour cream, milk or yogurt, tend to break down in the slow cooker. To prevent this, add them during the last 15 to 30 minutes of cooking. However, prepared items such as the Bob Evans' Refrigerated Mashed Potatoes in this recipe can be added at the beginning. Stir in spices for the last hour of cooking. They will lose flavor if cooked with the rest of the ingredients for the duration.

Resist the urge to stir. Each time you lift the lid to do so, heat escapes, extending the needed cooking time by up to half an hour. Some recipes do instruct you to stir halfway through the cooking process or toward the end, but otherwise it's best to leave the lid closed. To check progress without lifting the lid, spin the cover until the condensation falls off. Then it's easy to see inside.

http://www.culinary.net/articlesfeatures/FeatureDetail.aspx?ID=3564

1. According to the article, what are the TWO main benefits of a slow cooker?
_____   _____

2. What is the benefit of using flour when you brown your meat?

_____

3. Why should we wait until the last hour of cooking BEFORE we add the spices?

_____

4. Give examples (from the article) of a "hardy" and a "tender" vegetable.

_____ (hardy)   _____ (tender)

5. According to the article, why should we "resist the urge to stir"?

_____

SECTION B – Math Skills

❖ **Use these Conversion Tables to help you answer the following questions**

Weight		
1 imperial ounce	=	28 grams
1 gram	=	.035 imperial ounce
16 oz	=	1 lb.
1 imperial pound	=	454 grams
1 kilogram	=	2.2 imperial pounds

Abbreviations		
ounce	=	oz.
gram	=	g
pound	=	lb.
kilogram	=	kg
millilitre	=	mL
litre	=	L
quart	=	qt.

Volume		
1 mL	=	.035 oz.
1 fluid oz.	=	28.4 mL
8 fl. oz.	=	1 c.
1 litre	=	35.2 fluid oz.
1 quart	=	32 fluid oz.
1 mL	=	.001 L

Fahrenheit to Celsius		
F	=	(1.8 x C) + 32
C	=	5/9 x (F - 32)

Directions:
- ❖ **Read the menu and formulae (recipes) below and answer the questions.**
- ❖ <u>**Round off the measurements to three decimal places.**</u>

This brunch will be served at the Riptides Swim Club banquet.

Fresh Fruit Salad with Yogurt on the Side
Scrambled Eggs
Raisin Scones
Coffee and Tea

Recipe: Fresh Fruit Salad

Fresh fruit (in season), chopped
Fresh mint
Yogurt

One portion needs 230 mL of prepared fruit and ½ cup of yogurt.

Recipe: Scrambled Eggs   Yield: 5 portions

6 Eggs
1 Tablespoon of Milk
Butter

Procedure:
- Mix eggs with milk
- Turn into buttered skillet on medium heat
- Stir while cooking
- Serve immediately

Recipe: Raisin Scones   Yield: 24 scones

1 lb. All-purpose Flour	4 oz. Unsalted Butter, cold
1 T. Baking Powder	2 Egg Yolks
1 Tsp. Baking Soda	11 oz. Cream
1 Tsp. Salt	½ cup Raisins
l ½ oz. Sugar	

Procedure:
- Mix flour, baking powder, baking soda, salt, sugar and raisins together
- Cut in cold butter until pea sized
- Add eggs and cream – mix very little
- Roll out dough to thickness of 1 ½ inches, cut as desired.
- Bake at 400⁰ F. approximately 10 minutes
- Brush tops with melted butter while hot

Answer the following questions regarding the brunch menu. Use the conversion tables. Round off the measurements to two decimal places.

6. How many mL of prepared fruit will serve 25 portions? _____ mL

7. If 1 kg of prepared fruit serves 5 portions, how many kilograms will serve 40 portions? _____kg

To quadruple the recipe for Raisin Scones you need:

8. _____ grams of flour

9. _____ grams of sugar

10. _____ grams of cream

11. If 1 lb. coffee yields approximately 40 servings, how many pounds will be needed for 250 servings?_____ lb.

12. If 1 lb. of tea yields approximately 200 servings, how many pounds of tea will be needed for 50 servings?_____ lb.

Use the conversion tables to answer the following questions. Round off the measurements to two decimal places.

2 oz. of carrots will serve 1 portion.

13. How many grams of carrots will serve 2 portions?_____ g

14. How many grams of carrots will serve 75 portions?_____ g

1250 grams of beef tenderloin serve 8 portions

15. How many grams of beef tenderloin will serve 4 portions? _____ g

16. How many grams of beef tenderloin will serve 70 portions? _____ g

17. How many pounds of beef tenderloin will serve 55 portions?_____ lb.

To make 10 loaves of buttermilk bread, the following ingredients are needed:

- **6 lbs. bread flour**
- **2 oz. salt**
- **4 oz. sugar**
- **4 oz. shortening**
- **6 oz buttermilk powder**
- **2 litres water**
- **4 oz. fresh yeast**

18. How many kg of flour are needed for 15 loaves? _____ kg

19. How many grams of salt are needed for 15 loaves? _____ g

20. How many grams of shortening are needed for 30 loaves? _____ g

21. How many litres of water are needed to make 20 loaves? _____ L

22. How many grams of yeast are needed for 20 loaves? _____ g

23. The raw weight of a de-boned turkey roast is 7 lbs. Through the cooking process, 10% of the weight is lost. What is the weight <u>after</u> roasting?_____ lb.

24. How many turkey sandwiches can you make with 2 lb. of sliced turkey, if you use 2 oz. of turkey per sandwich? _____ sandwiches.

An emergency shelter has asked you to supply vegetable beef soup and sandwiches for 200 flood victims.

To make soup for 10 people you need:
- **½ kg each of carrots, celery, and onions**
- **450 grams of rice**
- **2 - 28 oz. cans of tomatoes**
- **½ kg of ground beef**

You have on hand:
- **78 lb. each of carrots, celery, and rice**
- **9 lb. of onions**
- **25 - 28 oz. cans of tomatoes**
- **18 kg of ground beef**

Do you have enough of the following ingredients to make soup for 200?

25. Carrots and celery	❑ yes	❑ no
26. Onions	❑ yes	❑ no
27. Rice	❑ yes	❑ no
28. Tomatoes	❑ yes	❑ no
29. Ground beef	❑ yes	❑ no

To make egg sandwiches for 10 people you need:
- **10 eggs**
- **20 slices of bread**

You have on hand:
- **25 doz. eggs**
- **10 loaves of bread (1 loaf has 35 slices)**

Do you have enough eggs and bread to make 200 sandwiches?

30.   Eggs   ❑ yes   ❑ no
31.   Bread   ❑ yes   ❑ no

32. 325⁰ F. is what temperature in Celsius? _____⁰C.

33. 200⁰ C. is what temperature in Fahrenheit? _____ ⁰F

Basic Math Skills

Addition, Subtraction, Multiplication, Division and Percentages

34. 39.75 + 15.109 + 930.8 + 5.392 + 94.5 = _____	35. 3 ½ + 4 ¼ = _____	36. 14.8 + 16.25 +13 ¾ = _____
37. 4 lb 8 oz + 3 lb 12 oz + 1 lb 4 oz = _____	38. 8 ½ - 3 ¾ = _____	39. 185.94 – 26.3 – 18.75 – 10 = _____
40. 18 lb 6 oz – 7 lb 12 oz = _____	41. 437.65 ÷ 6.5 = _____	42. 27 x 35 = _____
43. 0.5% of 36 = _____	44. 6% of 32 = _____	45. 35% of 198 = _____

You have now completed the practice assessment.
Use your score to see where you need more study help.
Use the math study package below to review mistakes and improve your skills.
Use the separate reading comprehension study package to improve your comprehension skills.

Answers_____

1. Minimal prep time, the meal is ready when you get home
2. It thickens the sauce
3. They will lose their flavor if you add them too soon
4. Hardy: potatoes, turnips, carrots Tender: peas
5. You will lose heat and the cooking time will be longer
6. 5750 mL
7. 8 kg
8. 1816 g
9. 168g
10. 924 g
11. 6.25 or 6 ¼ lb
12. 0.25 or ¼ lb
13. 112 g
14. 4200 g
15. 625 g
16. 10937.5 g
17. 18.93 lb
18. 4.09 kg
19. 84 g
20. 336 g
21. 41
22. 224 g
23. 6.3 lb
24. 16
25. Y 26. N 27. Y 28. N 29. Y 30. Y 31. N
32. 161 - 163 degrees C
33. 392 degrees F
34. 1085.551
35. 7 ¾ or 7.75
36. 44.8
37. 9lb 8 oz
38. 4 ¾ or 4.74
39. 130.89
40. 10lb 10 oz
41. 67.331   .
42. 945
43. 0.18
44. 1.92
45. 69.3

Math Study Package:

1) CONVERTING BETWEEN SIMILAR UNITS OF MEASUREMENT

We can convert similar units using ratios and proportions.

RATIOS:
A ratio is used to compare two or more quantities. The following are all ratios and are presented in different ways:

a)   1 to 4   b)   1 : 4   c) $\frac{1}{4}$ or ¼

These all mean that for every 1 of one thing there are 4 of another thing.
Note that the quantity given first is written on the top (the numerator) of the fraction. (This is called **fractional notation.**)

Practice:	Answers:		

1. Write as ratios in different ways:

a) $3.00 compared with $20.00	3 to 20	3:20	$\frac{3}{20}$
b) 14 litres compared with 1 litre	14 to 1	14:1	$\frac{14}{1}$
c) 7 pages compared with 10 pages	7 to 10	7:10	$\frac{7}{10}$

2. Write the following as ratios using fractional notation. Reduce the fraction to its lowest terms whenever possible:

a)   10 mm compared with 16 mm $\frac{10}{16} = \frac{5}{8}$

b)   5 minutes compared with 25 minutes $\frac{5}{25} = \frac{1}{5}$

c)   15 % compared with 5% chocolate syrup $\frac{15}{5} = \frac{3}{1} = 3$

PROPORTIONS:

A statement that two ratios are equal is called a proportion.
For example, the ratio of 1/2 is equal to the ratio of 6/12.

$$\frac{1}{2} \;=\; \frac{6}{12}$$

To check that this is true we can **cross multiply**. This means we multiply the top of one fraction by the bottom of the other fraction. The result will equal the top of the other fraction times the bottom of the first fraction.

So, 1 x 12 = 6 x 2. We can see this is true. Therefore $\frac{1}{2} \;=\; \frac{6}{12}$ **is a proportion**.

Example 1:
Is 2: 8 equal to 16 : 64 ?
First, set up both ratios as fractions:

$$\frac{2}{8} \bowtie \frac{16}{64}$$

When we cross multiply we find that: 2 x 64 is equal to 8 x 16. Both sides are equal to 128.
Therefore, 2: 8 is equal to 16 : 64, so this is a proportion.

Example 2:
Is 3: 27 equal to 9: 83 ?

$$\frac{3}{27} \; = \; \frac{9}{83}$$

When we cross multiply we find that: 3 x 83 = 249 and   9 x 27 = 243.
These are not equal and therefore not a proportion.

TO SOLVE PROPORTIONS:
If 3 of the 4 numbers in a proportion are given, then we can find the missing number.

$$1 \; : \; 2 \text{ is equal to } \; N : \; 12.$$

We can set up two equal fractions and cross multiply to find N.

$$\frac{1}{2} \; = \; \frac{N}{12}$$

When we cross multiply, we find that 2 x N = 1 x 12.
So 2N = 12.
If we divide both sides by 2 to solve the equation, we find that 1 N or N = 6.
Check: 1:2 = 6:12

Example:
4 : 5 is equal to 8 : N.   What is N?
Make 2 equivalent fractions from your information.

$$\frac{4}{5} \qquad\qquad \frac{8}{N}$$

Cross multiply: 4 x N = 8 x 5; 4 N = 40.
Solve: Divide both sides by 4. $N = 10$
Check: Substitute 10 for N. The two sides are equal, proving that 10 is the correct missing part of the proportion.

Practice 1:
Solve the following proportions using the above steps:
a)   18 : 1 = N : 3   b) A : 7 = 2 : 1

c)   5 : Y = 3 : 3   d)   1 : 2 = $\frac{1}{2}$: R

Answers:
a) 1 x N = 3 x 18; N = 54   b) A x 1 = 7 x 2; A = 14
c) 5 x 3 = 3 x Y; 3Y = 15; Y = 5   d) 1 x R = 2 x $\frac{1}{2}$; R = $\frac{2}{2}$; R = 1

Note: Proportions can be solved one step at a time (as above) or several steps at a time as you become more familiar with the process.

2) <u>METRIC MEASUREMENT</u>

<u>MASS:</u>

In the metric system, the base unit for measuring mass is the **gram.** Prefixes are used to describe multiples or fractions of a gram. Because the metric system is based on **10**, the easiest way to change from one metric unit to another is to move the decimal point (this is a short cut for **multiplying or dividing by 10, 100, 1000, etc.)**

1 kilogram (kg)	=	1000g
1 hectogram (hg)	=	100g
1 decagram (dag)	=	10g
1 GRAM		
1 decigram (dg)	=	.1g
1 centigram (cg)	=	.01g
1 milligram (mg)	=	.001g

Study the following table:

	1000 g	100g	10g	1	0.1 g	0.01 g	0.001 g
Units	kg	hg	dag	**gram**	dg	cg	mg

Example:

Change 58 g to kg: Starting at **g,** we must move 3 spaces to the left on the table to get to **kg.**
Count each space as one decimal place.
Therefore to convert from **g** to **kg**, we must move the decimal 3 places to the left.

$$58.0 \text{ g} = .058 \text{ kg}$$

Example:

How many mg are there in 2.5 g of oatmeal?

$$2.5 \text{ g} = 2500 \text{ mg oatmeal}$$

<u>VOLUME:</u>

In the metric system, volume is measured in **litres.**
The same prefixes as in units of mass are used to describe multiples and fractions of a litre.

Compare the following table with the one for units of mass. Use the same method of conversion for metric units of volume that we used for mass:

	1000 L	100 L	10 L	1	0.1 L	0.01 L	0.001 L
Units	kL	hL	daL	**Litre**	dL	cL	mL

We capitalize litre as L in all metric units of volume so that it does not appear as the digit l.

Example:

Convert 1.925 L into millilitres (mL).

$$1.925 \text{ L} = 1925 \text{ mL}$$

Example:

How many L of syrup are there in 5268.2 mL?

$$5268.2 \text{ mL} \quad = \quad 5.2682 \text{ L}$$
$$5.27 \text{ L (rounded)}$$

- To make metric conversions easily, memorize the above tables.
- The most commonly used metric units of mass are **kg, g,** and **mg**
- The most commonly used units of metric volume are **L** and **mL.**

Practice 2 (see answers at the end):

1. 27 kg = _____ g

2. 8664 mL = _____ L

3. 56.66 g = _____ mg

4. 6.27 mg = _____ kg

5. 4.88 L = _____ kL

6. 2.65 kg = _____ cg

7. 8921 g = _____ hg

8. 98 cL = _____ mL

9. .789 L = _____ cL

10. .477 daL = _____ mL

11. 4.32 L = _____ mL

12. 1522 mg = _____ g

3) **Imperial Measurement**

MASS:

In the imperial system, mass is measured in **ounces (oz),** **pounds (lb)** and **tons (t).**

8 fl oz	=	1 cup
2 cups	=	1 pint (pt)
2 pt	=	1 quart (qt)
4 qt	=	1 gallon (gal)

The units of volume that you should be familiar with in the imperial system are **fluid ounces (fl. oz), cups (c), pints (pt), quarts (qt),** and **gallons (gal).**

16 ounces (oz)	=	1 pound (lb)
2000 lb	=	1 ton

You can convert imperial units using a proportion and cross-multiplication, as shown on pages 2 and 3 <u>OR</u> you can use the following method. Choose the method that suits you best:

Multiply the number of units you have by the appropriate "conversion ratio".   Write the conversion ratio so that you can cancel the old units and end up with your answer in the new units.

Here is an example:

Convert 589 oz. to lbs. Because we start out with oz. and, according to our table, 1 lb. = 16 oz., we use the conversion ratio with 16 oz. in the denominator so that the oz. units can be cancelled and we are left with lbs. We write:

$$589 \; \cancel{oz.} \; \times \; \boxed{\frac{1 \; lb.}{16 \; \cancel{oz.}}} \; = \; \frac{589}{16} \; lb. \; = \; 36.81 \; lb.$$

Example:

How many cups are there in 18 gallons?

$$18 \; \cancel{gal.} \; \times \boxed{\frac{4 \cancel{qt.}}{1 \cancel{gal.}} \times \frac{2 \cancel{pt.}}{1 \cancel{qt.}} \times \frac{2 cups}{1 \cancel{pt.}}} \; = \; 288 \; cups$$

Practice 3 (see answers at the end):

1. 14 tons   = _____ lbs.

2. 6.5 pt.   = _____ qt.

3. 355 oz. = _____ lb.

4. 36 gal.   = _____ pt.

5. 5.25 lbs. = _____ oz.

6. 3 ½ qts. = _____ cups

7. 15 cups   = _____ fl. oz

8. 1 qt.   = _____ fl. oz.

9. 8 ½ lb. = _____ oz.

10. 1152 fl. oz. = _____ gal.

11. 5480 lb. = _____ tons

12. 6 pt.   = _____ fl oz.

4) Converting Between Imperial and Metric Units

When converting mass or volume from imperial units to metric or from metric units to imperial, refer to the following conversion tables and use the same "conversion ratio" method as in Part 3 **or** the ratio and proportion method shown in Part 1.

Volume		
1 mL	=	.035 fl oz.
1 fl oz.	=	28.4 mL
1 litre	=	35.2 fl oz.

There is considerable variation in the number of millilitres or fluid ounces in 'a cup', depending on whether one is referring to a US, Canadian or British cup! It is, therefore, important to check your recipe. Such differences may result in answers that are close to, but not the same as, those given below. In Canada, the standard equivalent for a cup is 250 mL or 8 fl. oz.

Mass		
1 ounce (oz.)	=	28 grams (g)
1 g	=	.035 oz.
1 pound (lb)	=	454 g
1 kilogram (kg)	=	2.2 lb.

Example: Convert 56 grams to ounces.

$$56 \text{ g} \times \boxed{\frac{.035 oz.}{1 g}} = 1.96 \text{ oz.}$$

Example: How many fluid ounces are there in 12.5 litres?

$$12.5 \text{ L} \times \boxed{\frac{35.2 fl.oz.}{1 L}} = 440 \text{ fl. oz.}$$

If the units you are converting do not appear on the conversion tables, first convert units within either metric or imperial systems and then use the appropriate conversion ratio.

Example: 55 kg = _____ oz

$$55 \text{ kg} = 55000 \text{ g} \; ; \quad 55000 \text{ g} \times \boxed{\frac{1 oz.}{28 g}} = 1964.29 \text{ oz}$$

Practice 4 (see answers at the end):
Some answers may vary, depending upon which way you decide to convert the units. *Please round answers to two decimal places. All answers should be **close** to those given below.*

1. 25 lb.   = _____ kg

2. 8 000 g   = _____ lb.

3. 350 g = _____ oz.

4. 16 fl oz. = _____ mL

5. 45 lb.   = _____ g

6. 15.5 L = _____ fl oz

7. 384 mL = _____ fl oz.

8. 1 655 fl oz. = _____ L

9. 16 lb. = _____ mg

10. 255 mL = _____ cups

11. 5 qt.   = _____ mL

12. 40 kg = _____ oz.

5) <u>CONVERTING RECIPES</u>

    a) To increase or decrease a recipe, it is necessary to multiply each ingredient by the appropriate factor (= number of times more **or** less).

Examples:

A muffin recipe calls for $2\frac{1}{2}$ cups of flour. How many cups are required for **3 times** the recipe?

$$2\frac{1}{2} \times 3 = \frac{5}{2} \times 3 = \frac{15}{2} = 7\frac{1}{2} \text{ cups}$$

How much flour would be required to make **half** the recipe?

$$2\frac{1}{2} \times \frac{1}{2} = \frac{5}{2} \times \frac{1}{2} = \frac{5}{4} = 1\frac{1}{4} \text{ cups}$$

Practice 5a (see answers at the end)

Using the following list of ingredients needed for making a cake, answer the questions below.

1 cup of flour	$1\frac{1}{2}$ cups of sugar	$\frac{1}{4}$ teaspoon of salt
$1\frac{1}{3}$ cups of egg whites	$1\frac{2}{3}$ teaspoons cream of tartar	$1\frac{1}{4}$ teaspoons of vanilla

1. Fill in the amount of each ingredient you would need to make two cakes.

_____ flour   _____ sugar   _____ salt

_____ egg whites   _____cream of tartar   _____ vanilla

2. Fill in the amount of each ingredient you would need to make a smaller cake that is one-half the size of the cake in the recipe.

_____ flour   _____ sugar   _____ salt

_____ egg whites   _____cream of tartar   _____ vanilla

3. Fill in the amount of each ingredient you would need to make 5 cakes.

_____ flour   _____ sugar   _____ salt

_____ egg whites   _____cream of tartar   _____ vanilla

    b) Most recipes will tell you the number of portions they serve. To change the recipe to serve more or fewer portions, use the following formula for ratio and proportion:

Set up equivalent proportions, cross-multiply and then solve for the unknown quantity.

Example:

A soup recipe that serves 8 portions calls for 4 cups of chicken stock.
How much chicken stock would be required for 12 portions?

$$\begin{array}{c|c} 4 \text{ cups} & N \text{ cups} \\ \hline 8 \text{ portions} & 12 \text{ portions} \end{array}$$
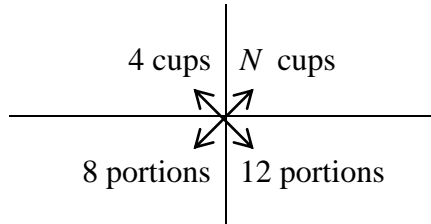
$$8\,N = 48 \text{ cups}$$
$$N = 6 \text{ cups}$$

Therefore, 6 cups of stock are needed to serve 12 portions.

Practice 5b (see answers at the end)

1. A lasagna recipe calling for 4 cups of tomato sauce serves 6 portions.
   a) How many cups of sauce are needed to serve 10 portions?

   b) How many quarts of sauce are needed for 30 portions?

2. A wedding cake recipe calls for 2.5 kg of cake flour. The recipe serves 40 portions.
   a) How many kg of flour would you need for the cake to serve 12 portions? How many grams is that?

   b) How many kg of flour would you need for a cake serving 65 guests? Convert this amount to pounds.

3. If 4 gallons of apple cider serve 60 people,
   a) how many gallons would be needed for 200 people?

   b) how many quarts would you need to serve 15 people?

4. 2 lb. bacon serves 8 people.
   a) How many lbs. are needed for 15 people?

   b) How many oz. are needed for 3 people?

6) **FRACTIONS AND PERCENT**

For more practice with fractions and percent, get the "Fractions" and "Percents" packages.

7) **TEMPERATURE**

Temperature is measured in degrees Fahrenheit (^{o}F) or degrees Celsius (^{o}C).
On the Fahrenheit scale, the freezing point of water is 32° F and the boiling point is 212° F.
On the Celsius scale, the freezing point of water is 0° C and the boiling point is 100° C.
Use the following formulae when converting between Fahrenheit and Celsius:

$$F = \frac{9}{5}C + 32 \qquad \textbf{when converting from Celsius to Fahrenheit}$$

$$C = \frac{5}{9}(F - 32) \qquad \textbf{when converting from Fahrenheit to Celsius}$$

Example: Convert 86° F into Celsius.

$$C = \frac{5}{9}(F - 32) \qquad C = \frac{5}{9}(86 - 32)$$

$$= \frac{5}{9}(54) = 30^o C$$

Example: Convert 15° C into Fahrenheit.

$$F = \frac{9}{5}(C) + 32 \qquad F = \frac{9}{5}(15) + 32$$

$$= 59^o F$$

Practice 7 (see answers at the end):

1. Convert 20° C to ^{o} F

2. Convert 98° F to ^{o} C

3. Convert 212° F to ^{o} C

4. Convert -10° C into ^{o}F

5. Convert -40° F to ^{o} C

6. Convert 42° C into ^{o} F

7. Convert 72° F to ^{o} C

8. Convert 22° C into ^{o} F

9. Convert -7° C into ^{o} F

10. Convert 36° C to ^{o} F

11. Convert -25° F into ^{o} C

12. Convert 10.5^o C to ^{o} F

ANSWERS

Remember that your answers may be slightly different from those given below, because of rounded decimals and the route you took to reach your answer.

Practice 2:

1. 27 000 g	2. 8.664 L	3. 56 660 mg	4. .00000627 kg
5. .00488 kL	6. 265 000 cg	7. 89.21 hg	8. 980 mL
9. 78.9 cL	10. 4770 mL	11. 4320 mL	12. 1.522 g

Practice 3:

1. 28 000 lbs	2. 3.25 qt	3. 22.1875 lb	4. 288 pt
5. 84 oz	6. 14 cups	7. 120 fl. oz.	8. 32 fl. oz.
9. 136 oz	10. 9 gal	11. 2.74 tons	12. 96 fl. oz.

Practice 4:

1. 11.36 kg	2. 17.62 lb	3. 12.25 oz	4. 454.4 mL
5. 20 430 g	6. 545.6 fl. oz.	7. 13.44 fl. oz.	8. 47.02 L
9. 7 264 000 mg	10. 1.116 cups	11. 4 544 mL	12. 1428.57 oz

Practice 5a:

1. 2 cups flour $2\frac{2}{3}$ cups egg whites
   3 cups sugar $3\frac{1}{3}$ tsp. cream of tartar
   ½ tsp. salt   2 ½ tsp. vanilla

2. ½ cup flour $\frac{2}{3}$ cup egg whites
   ¾ cup sugar $\frac{5}{6}$ tsp. cream of tartar
   $\frac{1}{8}$ tsp. salt $\frac{5}{8}$ tsp. vanilla

3. 5 cups flour $6\frac{2}{3}$ cups egg whites
   7 ½ cups sugar $8\frac{1}{3}$ tsp. cream of tartar
   $1\frac{1}{4}$ tsp. salt $6\frac{1}{4}$ tsp. vanilla

Practice 5 b:

1. a) $6\frac{2}{3}$ cups	b) 5 quarts
2. a) 0.75 kg; 750 g	b) 4.06 kg; 8.94 lb
3. a) $13\frac{1}{3}$ gal *or* 13.33 gal	b) 4 quarts
4. a) 3.75 lb	b) 12 oz

Practice 7:

1. 68º F	2. 36.$\dot{6}$º C	3. 100º C	4. 14º F
5. - 40º F	6. 107.6º F	7. 22.$\dot{2}$ º C	8. 71.6º F
9. 19.4º F	10. 96.8º F	11. - 31.$\dot{6}$ º C	12. 50.9º F