



First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_ Grade: \_\_\_\_\_  
 Teacher: \_\_\_\_\_ Parent's email: \_\_\_\_\_

## Capacity

In Mathematics, capacity is referred to as the maximum amount that something can contain. Math problems in this challenge involve the different capacities of variety of containers. Enjoy and don't forget to ask parents or siblings for help if you get stuck.

Kinder & First Grade: solve at least 3 problems.  
 Second & Third Grade: solve at least 6 problems.  
 Fourth Grade and above: solve at least 12 problems.

The following conversions are helpful to solve some of the problems:

STANDARD -> METRIC CONVERSIONS			
1 tbsp	=	3 tsp	= 15mL
1 fl oz	=	2 tablespoons	= 30 mL
1 cup	=	8 fl oz	= 237 mL
1 pint	=	2 cups	= 473 mL
1 pint	=	16 fl oz	= 473 mL
1 quart	=	2 pints	= 946 mL
1 gallon	=	4 quarts	= 3.8 L
1 gallon	=	128 fl oz	= 3.8 L
1 gallon = 4 quarts = 8 pints = 16 cups = 128 fl oz			

METRIC -> STANDARD CONVERSIONS			
1 mL		=	0.034 fl oz
1 cL	=	10 mL	= 0.34 fl oz
1 L	=	100 cL	= 33.8 fl oz
1 L	=	1000 mL	= 2.11 pints
1 L = 100 cl = 1000 mL			

### Problems

### Answer

- The capacity of Tina's water bottle is 24 oz. She filled her bottle with 16 oz. of water. How much more water could she fill her bottle until it reached its capacity?
- Raina made some homemade strawberry jam. She made enough for two jars. Each jar can hold 8 oz. of jam. How much strawberry jam, in oz., did she make?
- Laura had a large empty container. First, she poured 1 liter of liquid to the large container, then 2 liters. She finally poured 5 liters of liquid to the container. How much liquid, in liters, does the container have now?
- One cup can hold 8 oz. How many cups are in 32 oz.?
- Ron poured 8 cups of water into a big jug. He then split the water equally into 4 smaller containers. How much water, in oz., does each small container hold?  
*Hint: first find how many oz. are in a cup.*
- If a bucket can hold 12 cups of water. How many buckets are needed to hold 55 cups of water?
- Aaron has a jug that has 120 oz. of orange juice. After he poured some juice into 3 bottles, he has 66 oz. of juice left. How much orange juice, in oz., are in each bottle?
- A container has 625 ml of water. When 1 l 80 ml of water is poured into it, 105 ml of water overflows. What is the capacity of the container? Express your answer in liters and milliliters. *Hint: first convert units to ml.*

9. A water tank is filled with 3 gallons and 3 quarts of water. After 1 gallon and 1 quart of water is added into it, the tank is half filled. What is the capacity of the tank?

10. A big jar contains 1 l 140 ml of apple juice. 460 ml of the juice is poured into 2 bottles and the rest is poured equally into 4 cups. How much orange juice, in ml, does each cup have?

11. Jug A holds 1800 ml. Jug B holds  $\frac{3}{10}$  more. How much does jug B hold, in ml?

12. A bottle has a volume of 1,500 milliliters of water. If you pour 0.3 liters of water out of it, how much water will be left in it?

13. You had 24 liters of water. You used  $\frac{1}{5}$  of it yesterday. How many 48 milliliter cups can you fill with the leftover water?

14. A container had 1 l 800 ml of orange juice. Helen, Ender, Scott, and Noel each drank some orange juice from the container, leaving  $\frac{2}{9}$  of the orange juice for Elly. What was the average amount of orange juice Elly's friends drank (in ml)?

15. A moment ago there were 17.9 liters of water in a large container and 1.7 liters of water in a bucket. I poured in an equal amount of water into each container. Now the amount of water in the large container is 4 times that in the bucket. How much water did I pour into the container?

16. Holly is buying orange juice for her class party. There are 24 people in the class and she figures each person will drink 1.75 cups. If orange juice is sold in 59-ounce containers, how many containers does she need to buy?

17. Bottles A, B, and C each has some perfume. Maria transferred  $\frac{1}{8}$  of the perfume from bottle A to bottle B, then poured  $\frac{1}{8}$  of the perfume from bottle B to bottle C, and finally transferred  $\frac{1}{8}$  of the perfume from bottle C to bottle A. Now each bottle contains 49 ml of perfume. How much perfume was there in each bottle at first? Express your answer in milliliters. Hint: Work backwards.

18. Convert the following.  
13.5 qt. = \_\_\_ pt.  
4.25 cups = \_\_\_ fl oz.  
4.75 gal = \_\_\_ qt.  
3.5 gal = \_\_\_ l