8ᵗʰ Grade Assignment – Week #23

<u>Group Assignments</u>:

For Tuesday:

- Look over all the problems on *Proportions & Dimensional Analysis* **Practice Sheet #2** and **Practice Sheet #3**, and choose the more difficult ones to do in your group work. (The rest of the problems should be done individually.)

For Thursday:

- *Puzzle!* The sum of Andy's and Fred's ages is 22 years. Seven years ago, Andy was 3 times Fred's age. How old are they both now?
- *Density.* What is the weight of a ball of solid gold that has a diameter of 6cm?

<u>Individual Work</u>

- From *Proportions & Dimensional Analysis* **Practice Sheet #2** and **Practice Sheet #3**, whatever problems you didn't finish during your Tuesday group meeting (See above) you should finish individually.
- Do the following problems. If you haven't memorized them, then make flashcards, and work on it every day! (These flashcards are also at the end of this document.)

1 mile = _____ feet

1 ton = _____ pounds

1 pound (lb.) = ___ oz.

1 fl.oz. = _____ tbsp

1 tbsp = _____ tsp

1 cup = _____ fl. oz.

1 pint = _____ fl. oz.

1 pint = _____ cups

1 quart = _____ fl.oz.

1 quart = _____ pints

1 gallon = ___ quarts

1 m = _____ cm

1 m = _____ mm

1 km = _____ m

1 acre ≈ (_____ yd)^2

1 hectare = (_____ m)^2

1 kg ≈ _____ lbs

1 inch ≈ _____ cm

1 mile ≈ _____ km

1 mℓ water weighs ___ g

1 mℓ = _____ cm^3

1ft^3 ≈ _____ gal

1 oz ≈ _____ g

1 metric ton = _____ kg

1 fl.oz. ≈ _____ mℓ

1ℓ ≈ _____ fl.oz.

1 gallon ≈ _____ ℓ

1 m ≈ _____ ft

# Proportions & Dimensional Analysis – Practice Sheet #2

1) At a restaurant, 40 loaves of bread are needed to serve 136 guests. How many (whole) loaves of bread are needed to serve 90 guests?

2) A recipe calls for 3 cups of water and 5 cups of flour. How much water is needed if the recipe is expanded and 8 cups of flour are used?

3) At Jan's school, the ratio of tennis players to basketball players is 4:7. How many tennis players are there if there are 84 basketball players?

4) A 2000-mile flight from Denver to Boston takes 3 hours and 45 minutes. What is the average speed of the plane?

5) Write the four ways to express the ratio of this rectangle's dimensions.

10m [   ]
    24m
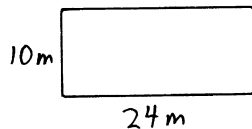
6) What is the average speed of a cyclist who goes up a 10-mile hill in 3 hours and 25 minutes, and then comes down in just 20 minutes?

7) Jill drove 216 miles and used 8.0 gallons of gasoline.
   a) What was her car's fuel efficiency in mpg (mi/gal)?

   b) At that rate of fuel consumption, how far can she go on 21 gallons of gasoline?

   c) At that rate of fuel consumption, how much gasoline is required to go 117 miles?

8) 682 cm = _____ km

9) 1.8 km = _____ cm

10) 4½ lb. = _____ oz.

11) 2.6 mi = _____ ft

12) 2.6 mi = _____ yd

13) 160 fl.oz. = _____ pt

14) 63 m ≈ _____ ft

15) 63 ft ≈ _____ m

16) 200 km ≈ _____ mi

17) 200 mi ≈ _____ km

18) 153 lb ≈ _____ kg

19) 153 kg ≈ _____ lb

20) 9.3 gal ≈ _____ ℓ

21) 9.3 ℓ ≈ _____ gal

22) 16 ft ≈ _____ cm

23) 3.2 ℓ ≈ _____ pt

24) A map of Poland has a (fractional) scale of 1:750 000.
   a) What does the scale mean?

   b) The distance from Krakow to Warsaw measures 33cm on the map. What is the true distance between the cities?

25) The Sears Tower in Chicago has a height of 1452 ft, not including the antennae at the top. Give both types of scales of the drawing of the Sears Tower, shown here.

26) The distance from Clifton to Borgen is 128 km, or 79 miles.

   Clifton   Borgen
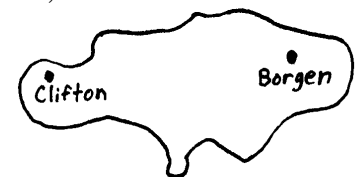
   a) What is the verbal scale in the metric system?

   b) What is the verbal scale in the U.S. system?

   c) What is the fractional scale?

Proportions & Dimensional Analysis – Practice Sheet #3

1) A recipe calls for 3 cups of flour and makes 8 servings. How much flour is required in order to enlarge the recipe to make 21 servings?

2) The ratio of adults to children at a fair is 4:9. How many adults are there if there are 207 children?

3) A group of 40 people had to pay $110 for admission to a museum. What would the cost be for a group of 16 people?

4) A farmer figures that planting 90 hectares will produce 225 m^3 of wheat. How many hectares should be planted in order to produce 500 m^3 of wheat?

5) A recipe calls for 750g of flour to make two dozen muffins. How much flour is needed to make 40 muffins?

6) Bill walks at a rate of 3 mph for 4 hours, then bikes for 2 hours at 12 mph. What is the average speed for the trip?

7) Lori's car uses 10¼ gallons of gas to go 328 miles. At that rate of fuel consumption…
   a) How far can she go on 8 gallons of gas?

   b) How many gallons are needed for a 720-mile trip?

8) What is the greatest distance between two points of the below island given that the scale is 1:10 000?

9) A map has a scale of 1 inch = 80 miles. What distance on the map represents 350 miles?

10) On a map, the distance between two cities is 3.4cm. In reality, they are 680km apart. Give both types of scales for the map.

11) It takes Mary and Herman an average of 9 days to paint four houses.
   a) How long does it take them to paint 12 houses?

   b) How many houses can they paint in 30 days?

   c) How long does it take them to paint 23 houses?

12) **Unit Conversions**
   a) 100 g ≈ _____ oz
   b) 20 fl.oz. ≈ _____ mℓ
   c) 4.3 ℓ ≈ _____ fl.oz.
   d) 2½ qt ≈ _____ ℓ
   e) 27 m ≈ _____ ft
   f) 9½ in ≈ _____ cm
   g) 782 km ≈ _____ mi

13) A German car has a gas tank that holds 50ℓ. How many gallons is that?

14) Alex can type 500 words in eight minutes.
   a) How long does it take him to type 2100 words?

   b) How many words can he type in an hour?

15) A cylindrical bucket has a 1-foot diameter and an 18-inch height. Calculate its capacity, both in liters and in gallons.

16) *Challenge!* After a heavy snowfall, Bill starts shoveling his driveway, which is 190 feet long, at 10:50am. At 11:30 he has done the first 75 feet. At what time will he finish?

7th Grade Measurement Flashcards

1 mile = ___ feet	1 cup = ___ fl. oz.	1 m = ___ cm
1 ton = ___ pounds	1 pint = ___ fl. oz.	1 m = ___ mm
1 acre ≈ area of □ square __ yd	1 pint = ___ cups	1 km = ___ m
1 pound (lb.) = __ oz.	1 quart = ___ fl.oz.	1 kg ≈ ___ lbs
1 fl.oz. = ___ tbsp	1 quart = ___ pints	1 inch ≈ ___ cm
1 tbsp = ___ tsp	1 gallon = __ quarts	1 mile ≈ ___ km

8th Grade Flashcards

1 mℓ water weighs __ g	1 fl.oz. ≈ ___ mℓ	
1 mℓ = ___ cm^3	1ℓ ≈ ___ fl.oz.	
1 hectare = area of □ square __ m	1 gallon ≈ ___ ℓ	
1ft^3 ≈ ___ gal	1 m ≈ ___ ft	
1 oz ≈ ___ g		
1 metric ton = ___ kg		