

Tutorial Session Notes

Grade 7

Quarter #2 (Week 9-16)

About these notes:

- These notes are primarily for those who are acting as the tutor – either a parent or a class teacher.
- In the first year of JYMA, Maria (our JYMA tutor) and I met every week and talked about grades 5-8, and we made a list of suggested topics for the Friday tutorial session.
- In order to support those who are acting as the tutor for their child or a whole class, I am sharing these notes with those who are acting as the tutor.
- Of course, these tutorial sessions are also an opportunity for the students to ask their tutor questions.
- If you are acting as the tutor, it may be helpful to read the section of the JYMA Handbook titled “The Role of the Tutor”.

Week #9

- In preparation for the upcoming test, go over any questions from the homework.
- Other problems to go over:
 - Measurement Sheet #6: How did they do with problems # 2, 4, 5, 6?
 - Measurement Sheet #6: problem #17
 - Measurement Sheet #7: problem #5
 - Measurement Sheet #5: problem #5
 - If time, Measurement Sheet #7: problem #20, 24

Week #10

- Ask if they did the group assignment "row of houses".
 - This is puzzle problem #98 from my puzzle book.
 - Answer: South African drinks water, and the Nepali has a zebra.
 - If they didn't finish it, perhaps you can try it together now.
- Ratio practice:
 - (1) The ratio of apples:bananas = 7:5.
 - What are the three thoughts?
 - If there are 70 bananas, how many apples are there?
 - (2) If Ben weighs 72 lbs and Fred weighs 108 lbs, then what is the ratio of their weights?
- Similar figures.
 - two triangles: one triangle has sides that are 10,12,16 meters, and the other triangle has sides that are 15, 18, 24 cm. Are they similar? (Answer = yes)

Week #11

- Ratios
 - 1) A recipe calls for 10 fl.oz. of cooking oil and 2 cups of water.
Find the ratio of water to oil. (Answer: O:W = 5:8)
Write down the three thoughts for this ratio
$$O = \frac{5}{8} W$$
$$W = \frac{8}{5} O$$
$$8xO = 5xW$$
 - 2) The weight of Jasmine the cat to Gaucho the dog is 3:11
What are the three thoughts?
How much does Gaucho weigh if Jasmine weighs 15 lbs?
- Draw an irregular 6-sided polygon (such as #6 on p25). Have them draw, in a different orientation, a polygon similar to it.
- Practice playing the game Skedoodle (see week #11 assignment)
 - Feel free to agree on different rules

Week #12

- **Ratios!!**
 - Key example: There is a Zoo with just monkeys and elephants. Ratio of elephants:monkeys is 5:7
 - E:M = 5:7 What are the three thoughts?
$$E = \frac{5}{7} \times M \quad M = \frac{7}{5} \times E \quad 5 M = 7 E$$
 - The new fourth and fifth thoughts have to do with proportions of the whole
 - What proportion of the zoo is elephants? (answer: 5/12)
 - What proportion of the zoo is monkeys? (answer: 7/12)
 - Questions:
 - If there are 60 elephants, how many monkeys are there? (Answer: 84)
 - If there are a total of 60 animals at the zoo, how many are elephants and how many are monkeys. (Answer: 25 elephants and 35 monkeys)
- **Using Ratios** to solve for similar triangles:
 - Rectangle #1: Base= 12ft height = 8ft
 - Rectangle #2: Base = 7m, Find the height
 - **Don't** solve this the normal algebraic way (which I save for 8th grade). Instead, use the 3 thoughts.
 - **Solution:**
$$B:H = 12:8 \rightarrow B:H=3:2$$
(One of the 3 thoughts) $H = \frac{2}{3} B$
$$H = \frac{2}{3} \times 7 \rightarrow H = \frac{14}{3} \approx 4.67m$$
- **Reciprocals** Do Ratios – Part I – Sheet #4, problem #6, 7
- **Puzzles.** If they didn't do the puzzles in the group assignment go over it.

Week #13

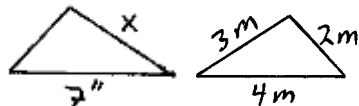
- **Key Ratio Example**
 - There are 40 women and 16 men in a choir. What are the 4 ways to write the ratios: Give it both in decimal and whole number form. Answer:
 - $W:M = 5:2$
 - $M:W = 2:5$
 - $W:M = 2.5:1$
 - $M:W = .4:1$
- **Whole Number Form.**
 - $X:Y = 5:7$ What are the 3 thoughts?
- **Decimal Form**
 - $A:B = 2.3:1$ What are the 2 thoughts? Answer:
 - $A = 2.3*B$
 - $B = A/2.3$
- **Practice Questions:**
 - There's a park that has just deer and wolves. The ratio of deer to wolves in the park is 15:2.
 1. How many deer are there if there are 12 wolves? (Answer: 90)
 2. How many of each are there if there are a total of 255 animals? (Answer: 225 deer and 30 wolves)
- **Homework Review.** Make sure they understand everything from ratio sheet 5, especially #8
- **Puzzle.** Go over puzzle problem if there is time. Problem #109

Week #14

- **Super important!!** Go over anything on Ratios (Part I), Sheet #6. Be sure that they clearly understand everything. The test is coming up, and often students are still a bit shaky at this point. Give them extra problems that are similar to those appearing Sheet #6.
- Ask them to share how they did the shadow problem, what their measurements were, and how they did it.
- If extra time, go over puzzles in the group assignment. Ask how they did it, and to share their solutions.

Week #15

- Ask if they can explain how the jug puzzle (from last week's group assignment) works when you pour from the big jug into the small one. (In Wednesday's lecture, I showed how it works when you pour from the small jug into the big one.)
- Review the idea of similar figures. Ask what can be said about two figures that are similar? Answer: (1) They have the same angles; (2) They have the same shape; (3) The ratio of the lengths of the sides is the same.
- Go over this problem, assuming the two triangles are similar:



- Go over the entire practice test make sure they understand everything on it.
- Make sure understand they understand Sheet #7.
- If extra time, make up more similar problems.

Week #16

- Note to tutor: do not use algebra on any problem in this unit.
- Percents Flashcards
 - Test to see how they are with the percents flashcards. They likely don't know these facts yet, but need to work on them in the coming weeks. Knowing these facts is important for the work to be done in this unit. These flashcards are found at end of assignment this week.
- Make sure really understand 10% and 1%. Do the following problems:
 - What is 10% of 62?
 - What is 1% of 54?
 - What is 10% of 8,700
 - What is 1% of 652?
 - Be sure they understand that the following questions are all essentially the same:
 - What is 10% of 62?
 - What is $1/10$ of 62?
 - What is $62 \div 10$?
 - Be sure they understand that the following questions are all essentially the same:
 - What is $16\frac{2}{3}\%$ of 420?
 - What is $1/6$ of 420?
 - What is $420 \div 6$?
- Practice problems. Do these:
 - What is 0.73 as a percent?
 - 0.0823 as a percent?
 - What is $37/50$ as a percent?
 - what is 9% as a decimal?
 - What is 90% as a decimal?
 - What is 8% as a fraction?
 - What is $5\frac{1}{4}\%$ as a decimal and fraction?
 - What is 80% of 75?
 - 700 is what percent of 2,800?
 - 62 is what percent of 620?
- If time, ask how they did with the tower of Hanoi puzzle (see group assignment).