Tutorial Session Notes
Grade 7
Quarter #1 (Week 1-8)

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 #1

- Introduce each other.
- Today is the first day – so make it fun! Perhaps, play a game.
- Ask about what topics they remember learning last year, and perhaps so a few simple problems related to this.
- Go over divisibility rules for 2, 3, 4, 5, 9, 10
- Go over the basics of fractions, including reducing, and the four processes.
- Answer questions from **Review Sheet #1** (from the document titled "Arithmetic ReviewSheets"), if you still have time, make up similar problems.

Week #2

- Review math tricks
    - Multiplying by 999
    - Multiplying by 11
    - Multiplying by 5 and dividing by 5
    - 107*102
    - Note: This is all explained in purple book (MS Source Book)
- Give big number, and ask what it is divisible by.
- Decimals with exponents $(0.03)^2$
- Practice converting fractions to decimals and vice versa
- Practice Long division with decimals: 788.4÷.012 788400÷12.

Week #3

- Prime factorization.
  - 13,800
  - 7,920,000
  - Big Question: How can I tell how many zeroes a number will end in, given the prime factorization? (You could spend a good amount of time on this.)
    (Answer: The number of ending zeroes is the number of pairs of 2's and 5's.)
- Roots
  - Square root of: 900, 121, 640,000
  - cube root of: 125
  - 4th root of: 100,000,000
- Fractions to decimals:
  - $0.025 \rightarrow 25/1000 \rightarrow 1/40$
    - or, $0.25 = ¼ \rightarrow 0.025 = .25/10 \rightarrow$ so $.025 = ¼ \times 1/10 \rightarrow 1/40$
  - $7/25*4/4 = 28/100 = .28$

Week #4

- Review roots:
  - Square root of 144
  - Square root of 160,000
  - Cube root of 125,000,000,000
  - 4th root of 260,000
- Cube a decimal
  - $(2.3)^3$
  - $(0.04)^3$
- Convert to a fraction
  - 0.08
  - 0.0125
    - 0.125 = 1/8, so 0.0125 is 1/80
- If time, mixed number problems
  - $13¼ - 5^5/_8$
  - $2⅓ \times 6¾$
  - $(3¼)^2$

Week #5

- Remind them to work on the puzzle given in the group assignment.
- Measurement: What is the picture for each metric unit
    - Cm - end of pinky finger
    - Mm - big grain of sand
    - Km - little more than half a mile
    - How big is a liter?
    - How big is a gram? Etc.
- Remind them to mark 1 km and 1 mile from their house.
- Remind them to do their flashcards
- Practice mental math:
    - 77x83
    - 28x32
    - 195x205
- If time, do $\sqrt{1369}$ (= 37)
    - Use Trial and error (Guess and check)
    - It's bigger than 10, 20, and 30, but less than 40.

Week #6

- Measurement: Again, review the picture for each metric unit
    - Cm - end of pinky finger
    - Mm - big grain of sand
    - Km - little more than half a mile
    - How big is a liter?
    - How big is a gram? Etc.
- Problems:
    1. Square root of 90,000
    2. cubed root of 1,000
    3. cubed root of 8
    4. cubed root of 8,000
    5. 4th root of 810,000
- Quiz students on their flashcards
- Give problems similar to Measurement worksheet #2 problem #9 (Page 13)
- quiz them on measurement amounts (1cm = pinky width, etc)
- Practice problems:
    - 5 pints + 2 gallons = ? (give answer in gallons OR pints)
    - 380 g + 1.8 kg = ? (give answer in grams OR Kg)
- Ask them if they did puzzle Tear and Stack. If not, go over.

Week #7

- Go over group work assignments
- Ask if there are questions from the workbook assignment (p14-15)
    - Give measurement problems similar to p15, #8.
    - How did you do with the word problems. Go over if needed.
- Practice Roots
    - Cube root of 27
    - Cube root of 125,000
    - Fourth root of 1600000000

Week #8

- Practice new trick (squaring a number ending in 5).
    - 45^2
    - 75^2
    - 195^2
- Make sure to go over new group problem (mentioned in lecture today:
    - Find the third side of a triangle where hypotenuse is 13 and side is 12. Picture squares, area of squares. (do NOT use formula)
- Go over Measurement Sheet #4 (p16-17)
    - Important!! go over any word problems they have questions about
    - Make sure they are good with everything on Sheet #4.
    - If time, do challenge problems: #20 and #21.