Tutorial Session Notes
Grade 6
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.
- Do a couple of Long Division problems: 2148÷6; 713÷23
- Go over divisibility rules for 2, 3, 4, 5, 9, 10
- Go over the basics of fractions, including reducing, and the four processes.

Week #2

- Converting mixed number to improper. $3\frac{4}{5} \rightarrow 3 + \frac{4}{5}$ - want to get equal sized pieces
    - ask: How many 1/5ths in 3?
    - 15/5 + 4/5 = 19/5.
- Review fractions in every tutorial session. One +- problem, one x, one ÷.
- Multiplication with decimals
    - step 1. estimate answer
    - step 2. multiply out
    - step 3. add decimal where they think it goes, based on step 1 answer.
- Practice Problems:
    3.5 x 2.6
    4.1 x 0.52
    0.352 x 6.21
- Give a decimal subtraction problem, where the second number has more decimals, so they have to remember to add zeroes to the top number. (ex. 2.3-1.634)

Week #3

- Long division. Go over explanation on sheet #3. Give similar examples. This cold take much of the time.
- Go over math tricks: 5.3x4, 120/4, 107x103, 1.9/100

Week #4

- How would you do 1/2 way between…
    - 47 and 65?
    - 25 and 28?
    - 3/8 and 7/8?
    - 1/5 and 2/5?
- Ask if anyone did the challenge problem.
- Ask if anyone did the chicken fox and sack of grain problem, if so, have them share with the other students how did it.
- If time, 2,329÷724, leave as mixed number.
    - Emphasize 1st question to ask, 7 into 23.
    - How do we know the estimate was good? Too big? Too small?

Week #5

- Review idea of significant digits
    - 5300 - 2 significant digits
    - 0.008 - 1 significant digit
- Practice long division that results in a repeating decimal:
    - 7/12 - give answer as repeating decimal.$58\overline{3}$
- Other practice problems:
    - $(.012)^2$
    - $(30)^3$
    - $8\frac{1}{2} - 3\ {}^{4}/_{5}$
    - $(5\frac{1}{2})^2$
- Tell them they should try to play line of four game with their family.

Week #6

- Mental math review. Look at worksheet #6 mental math, give similar problems.
- Go over group assignment puzzles.
    - Quinn and Beth have $25 combined. If Beth gives $6 to Quinn, then Quinn will have $3 more than Beth. How much money did Beth have in the beginning? (Answer: $17)
    - Kevin has 5 more marbles than Fred. Rex has 14 fewer marbles than Kevin and Fred combined. How many marbles do the boys have altogether, if Rex has 15 marbles? (Answer: 44 marbles)

Week #7

- Give estimating problems similar to Sheet #7.
- Give easy Square roots problems
  $\sqrt{25}$ $\sqrt{4}$ $\sqrt{900}$
- $4^2 = 16$, therefore $\sqrt{16} = 4$
- A more complicated example
  - Find 527^2 Multiply out to get 277,729
  - Cast out nines to check answer
  - $527^2 = 277{,}729$ therefore $\sqrt{277729}$ is 527
- Another example
  - 0.0012 x 0.07 = 0.000084
  - Write down in reverse: (inverse): 0.000084÷0.07 = 0.0012 or 0.000084÷0.0012 = 0.07
  - If that is difficult to understand, can you give a simpler examples
  - Since 8x7 = 56, we can say that 56÷7=8 or 56÷8=7
- Converting decimals to fractions and fractions to decimals:
  - 0.38 → 19/50
  - 0.075 in two ways
    - 75/1000 → 3/40
    - 0.75 = ¾, therefore 0.075 is ten times smaller than that.
  - $^5/_8 = 0.625$
  - 11/24 → $0.458\overline{3}\ldots$
  - (challenge!) 17/26 - $.6\overline{538461}$
- If time: Group work questions - ask what they did.

Week #8

- Go over questions from sheet #8.
- Converting fractions to decimals, and decimals to fractions
  - 0.713
  - 0.015
  - 7/50
  - 13/24 (= $0.541\overline{6}$)
- Go over problems 47-49 (were we for group work) and make sure they understand the shortcut.
  - Give new examples, such as: 13/20, 2/11, 10/11, 5/9, 23/99, 691/999
- Answer questions about group assignment.
  - how to construct an equilateral triangle: given a line, put equilateral triangle onto that line
- Answer questions on the geometry practice sheet
- Give a couple square root problems:
  - $\sqrt{144}$
  - $\sqrt{490000}$