

6th Grade Assignment – Week #5

Note for Parent/Teacher

- Starting next week (week #6), I will be integrating geometry into my JYMA lectures. This “main lesson” will go for three weeks.
- For this geometry work, the students will need the following:
 - Compass (for drawing circles)
 - colored pencils
 - straightedge (or a ruler)
 - Clean paper without lines - main lesson pages are fine.
 - lots of patience!
- As parent or teacher, if you are planning to handle this as a real main lesson for your 6th grader(s), then it may be helpful to watch the two videos (see below link) from my 6th grade online workshop for teachers. Please keep in mind that these videos are part of a larger teacher workshop, and therefore some of what I am talking about does not necessarily pertain to geometry or our JYMA work. But I hope it is helpful for you.

These videos are intended only for teachers/parents;

please don't show them to your students, as it will spoil the fun we will have together!

[Here is the link for the geometry teacher videos.](#)

This is the password: JYMA6

Individual Homework: See how much you can do on Sheet #5.

For Tuesday's Group Meeting. Play the game Line of Four.

- Before your group meeting, you will need to print the file “Line of Four Game” (found on the [assignment page](#)) and carefully read the instructions.
- If your group is meeting via tele-conferencing, then you'll have to figure out how to make it work.
- If you have three people in your group, then you can play two people (who decide together what the next move should be) against one.
- You will need 18 checker pieces of one color and 18 checker pieces of another color. Alternatively, you can use gems (two different colors), or you can cut up colored paper.

For Thursday Group Meeting.

- 1) *Counting Siblings.* Each of my daughters has as many sisters as brothers, but each of my sons has twice as many sisters as brothers. How many sons and daughters do I have?
- 2) *A String of Digits.* Using the below string of digits, place plus and minus signs between some of the digits such that the result is 100. For example, we could do $9+87-65-4+321$, but that gives us 348 instead the desired outcome of 100.
9 8 7 6 5 4 3 2 1
- 3) *Cutting Cake.* How can a cake be cut into eight pieces by making only three straight cuts with a (normal) knife?

6th Grade Math – Sheet #5

Do it in your head.

- 1) $800 \cdot 900$
- 2) $40,000 \div 80$
- 3) $74.5 \cdot 1000$
- 4) $7.31 \div 100$
- 5) $11 \cdot 23$
- 6) $110 \cdot 96$
- 7) $17 \cdot 4$
- 8) $550 \cdot 4$
- 9) $7 \cdot 0.005$
- 10) $0.012 \cdot 0.04$
- 11) $6800 \div 4$
- 12) $140 \div 4$
- 13) $106 \cdot 104$
- 14) $107 \cdot 108$
- 15) $104 \cdot 105$
- 16) 9^2
- 17) 700^2
- 18) $\frac{3}{5} + \frac{2}{5}$
- 19) $\frac{5}{8} \cdot \frac{8}{15}$
- 20) $\frac{3}{7} \cdot \frac{2}{7}$
- 21) $\frac{4}{15} \div \frac{2}{5}$
- 22) $4 - 0.3$

Multiplication Facts.

(Have you been practicing your flashcards?)

- 23) $13 \cdot 3$
- 24) $14 \cdot 2$
- 25) $25 \cdot 3$
- 26) $13 \cdot 13$
- 27) $15 \cdot 5$
- 28) $25 \cdot 5$
- 29) $16 \cdot 2$
- 30) $13 \cdot 2$
- 31) $16 \cdot 3$
- 32) $25 \cdot 6$
- 33) $15 \cdot 3$
- 34) $14 \cdot 14$
- 35) $25 \cdot 4$
- 36) $16 \cdot 4$
- 37) $15 \cdot 15$
- 38) $25 \cdot 2$
- 39) $16 \cdot 16$
- 40) $14 \cdot 3$
- 41) $13 \cdot 4$
- 42) $15 \cdot 2$
- 43) $18 \cdot 18$
- 44) $15 \cdot 4$
- 45) $18 \cdot 2$
- 46) $25 \cdot 25$

Decimals.

- 47) $56.32 + 0.004$

- 48) *Cast out nines to check your answer.*

$$\begin{array}{r} 3896000 \\ \times \quad 57400 \\ \hline \end{array}$$

- 49) $56.32 - 0.004$

- 50) $(0.032)^2$

Short Division.

51) Leave your answer as a mixed number.

$$4739 \div 8$$

52) Leave your answer as a decimal.

$$180247 \div 3$$

Long Division.

Fix the divisor.

Make the divisor easier by getting rid of the decimal or the ending zeroes. *Do not actually divide yet.*

Example: $735.48 \div 8.3$

Here we change the problem to $7354.8 \div 83$

Example: $528.3 \div 2600$

Here we change the problem to $5.283 \div 26$

53) $21.3 \div 5.68$

We change it to:

54) $687.4 \div 37000$

We change it to:

55) $7 \div 0.097$

We change it to:

For the rest of the problems on this sheet, show your work on a separate sheet.

Now, consider the answers that you just gave and do each division problem. Give your answers as decimals, and stop at four significant digits.

56) $21.3 \div 5.68$

57) $687.4 \div 37000$

58) $7 \div 0.097$

Fractions.

59) $\frac{4}{15} + \frac{10}{15}$

60) $\frac{7}{20} + \frac{11}{15}$

61) $\frac{5}{8} \cdot \frac{6}{7}$

62) $\frac{5}{6} \div \frac{5}{12}$

63) $9\frac{5}{7} + 4\frac{3}{4}$

64) $16\frac{2}{5} - 6\frac{3}{4}$

65) $7\frac{2}{5} - 2\frac{2}{15}$

66) $4\frac{1}{2} \cdot 1\frac{1}{3}$

67) $6\frac{2}{3} \cdot 2\frac{3}{4}$

68) Two hours is how many seconds?

69) What is 2^{20} ?

70) *Challenge!*

Continuing from 2^{20} , calculate powers of 2 up as high as you can go, perhaps as high as 2^{100} . It is advisable to check with your teacher after each exponent of 10 (e.g. 2^{20} , 2^{30} , etc.) to make sure your answer is correct before moving on.