

6th Grade Assignment – Week #3

Individual Homework:

- See how much you can do on Sheet #3 from the 6th Grade Workbook.
- **Important!** This needs to be done before Thursday's group meeting!

In the middle of the second page of Sheet #3 (of the 6th grade workbook) there is an important example of long division.

Read through this example with your 6th grader, and help them to understand it. Then do problems #34-36 with them. (The answers are as follows.)

34)...7 go into 37

35)...8 go into 46

36)...3 go into 9

They should not actually find the answers to these long division problems. The answers are determined with problems #37-39, and will be done as part of their group work (see below).

For Tuesday's Group Meeting

- If desired, start the group meeting by playing Bizz-Buzz. Remember, each time you play, you should use different numbers for Bizz and Buzz. Perhaps now you can now add a third number for "Bing".
- Re-visit the last stick puzzle from last week's group work (shown again below). As I mentioned in the lecture, there are actually nine different solutions to this puzzle – eight of which include one large square, and one of which consists of four small squares. See how many solutions you can discover!

Move two sticks into a new position, so that you end up with exactly four squares. (See how many different solutions you can find!)



- Find two numbers that multiply to 70 and...
 - a) add to 37.
 - b) subtract to 69.
- *Crazy Challenge!* Find two numbers that multiply to 840 and...
 - a) add to 71.
 - b) subtract to 163.

For Thursday's Group Meeting

- Long division practice. We are now building up to fairly large long division problems. See how far you can get with these four problems. (It's OK if you only finish the first one or two, as long as you are really trying your best!)
 - 1302 divided by 21 (This one is not in the workbook. It has no remainder.)
 - 3745 divided by 738 (This one is #37 in the workbook)
 - 45800 divided by 76 (This one is #38 in the workbook)
 - 92538 divided by 274 (This one is #39 in the workbook)

6th Grade Math – Sheet #3

Do it in your head.

- 1) $60 \cdot 400$
- 2) $500 \cdot 800$
- 3) $45000 \div 5000$
- 4) $720,000 \div 800$
- 5) $84 + 38$
- 6) $2000 - 38$
- 7) $2851.2 \div 1000$
- 8) $0.45 \div 1000$
- 9) $0.0003 \cdot 100$
- 10) $11 \cdot 42$
- 11) $11 \cdot 76$
- 12) $110 \cdot 930$
- 13) $16 \cdot 4$
- 14) $150 \cdot 4$

- 15)
$$\begin{array}{r} 749 \\ 524 \\ 602 \\ 347 \\ 996 \\ 283 \\ + 418 \\ \hline \end{array}$$

Decimals.

- 16) $30.5 + 5.26$

- 17) $92.4 - 0.286$

- 18) $51.893 - 4.26$

- 19) $0.04 \cdot 0.7$

- 20) $0.006 \cdot 0.03$

- 21) $6 \cdot 0.03$

- 22) $0.06 \cdot 8000$

- 23) $0.07 \cdot 2.3$

Cast out nines to check your answer.

$$\begin{array}{r} 24) \quad 7823000 \\ \quad \times 95600 \\ \hline \end{array}$$

$$\begin{array}{r} 25) \quad 4.38 \\ \quad \times 0.974 \\ \hline \end{array}$$

Reduce each fraction.

$$26) \quad \frac{540}{720}$$

$$27) \quad \frac{280}{44000}$$

Fractions.

28) $\frac{7}{10} + \frac{2}{25}$

29) $\frac{27}{37} + \frac{9}{37}$

30) $\frac{3}{8} \div \frac{11}{16}$

31) $\frac{18}{25} \cdot \frac{15}{16}$

32) Convert to a mixed number (e.g. $3\frac{2}{5}$).

a) $\frac{23}{3}$

b) $\frac{77}{12}$

33) Convert to an improper fraction. (e.g. $\frac{12}{7}$)

a) $5\frac{2}{3}$

b) $11\frac{7}{8}$

Long Division.

Example:

$$280139 \div 583$$

With difficult divisors like 583 we should *not* first ask ourselves, “How many times does 583 go into 2801?”, but rather, we round 583 to 600, drop off the zeroes, and then ask the easier question, “How many times does 6 go into 28?” The answer to this question is 4, so we *estimate* that 4 is the first digit in our answer (it may be off by one!) and then we multiply 4 times 583 to see if it works.

$$\begin{array}{r} 4 \\ 583 \overline{) 280139} \\ \underline{-2332} \\ 469 \end{array}$$

Since 469 is less than 583, we can tell that 4 is correct as the first digit of our answer. After bringing down the 3, we then find the next digit in our answer by asking, “How many times does 6 go into 47?” (Notice that we rounded 46 to 47 because the next digit, 9, was 5 or greater.) The answer to this question is 7, so we *estimate* that 7 is the next digit in our answer.

$$\begin{array}{r} 47 \\ 583 \overline{) 280139} \\ \underline{-2332} \\ 4693 \\ \underline{-4081} \\ 612 \end{array}$$

But since 612 is greater than 583, we know that 7 is too small. So instead, we try 8 as the second digit, which works fine.

$$\begin{array}{r} 48 \\ 583 \overline{) 280139} \\ \underline{-2332} \\ 4693 \\ \underline{-4664} \\ 29 \end{array}$$

(This problem is unfinished.)

Fill in the Blanks.

34) With $3745 \div 738$, we first ask, “How many times does _____ go into _____?”

35) With $45800 \div 76$, we first ask, “How many times does _____ go into _____?”

36) With $92538 \div 274$, we first ask, “How many times does _____ go into _____?”

Now, using your above answers, do the below division problems. Leave your answers as mixed numbers. *You must show your work on a separate piece of paper.*

37) $3745 \div 738$

38) $45800 \div 76$

39) $92538 \div 274$

Short Division.

40) $6583 \div 4$

41) $26618 \div 7$

Mixed numbers.

42) $4\frac{7}{11} + 3\frac{8}{11}$

43) $8\frac{5}{12} + 9\frac{7}{8}$