

6th Grade Assignment – Week #2

Note for Parents/Teachers

- Here is a book you may wish to purchase for your 6th grader(s):
 “String, Straightedge, and Shadow (The Story of Geometry)”, by Julia Diggins
[Here is a link for purchasing that book.](#)

This book is highly recommended as a reader during the Geometry main lesson (starting in week #6). It nicely integrates reading, geometry, and history.

- Here is an explanation of “short division”, which may be new to some of you:

Example: $58741 \div 7$ (leave answer as a mixed number).

Step 1: 7 goes into 58 eight times with a remainder of 2

$$7 \overline{) 58 \overset{27}{4} 1}$$

Step 2: 7 goes into 27 three times with a remainder of 6.

$$7 \overline{) 58 \overset{27}{64} 1}$$

Step 3: 7 goes into 64 nine times with a remainder of 1.

$$7 \overline{) 58 \overset{27}{64} 11}$$

Step 4: 7 goes into 11 once with a remainder of 4. We then put this remainder over the divisor, thereby forming the fractional part of the mixed number.

$$7 \overline{) 58 \overset{27}{64} 11} \begin{array}{l} 8 \\ 3 \\ 9 \\ 1 \end{array} \frac{4}{7} \leftarrow \text{answer}$$

Individual Homework:

- See how much you can do on Sheet #2 from the 6th Grade Workbook.
- Determine which flashcards to work on (look at the end of Sheet #2)

For Tuesday’s Group Meeting

- Play Bizz-Buzz (See Week #1)
- Try to figure out how I did the birthday magic trick.
 - The calculations were: take the month times 10, plus 8, times 5, plus 122, doubled, and finally add the day.
 - I suggest taking a few birthdays, doing the calculations, and looking at the final result to see what you notice.
 - I'll go over how the trick works during Wednesday’s lecture.

For Thursday’s Group Meeting

1) Trading Cats

A boy said to a girl, “Give me one of your cats and I’ll have as many cats as you have.” The girl then replied, “True, but if you give me one of your cats, I’ll have twice as many as you.” How many cats did they each have to begin with?

2) Stick Puzzles. With each puzzle, every stick must be part of a square.

No two sticks may be placed on top of each other or side by side.

- a) Move two sticks so that you end up with exactly two squares.



- b) Move four sticks to make exactly three squares.



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



6th Grade Math – Sheet #2

Do it in your head.

- 1) $60 \cdot 90$
- 2) $500 \cdot 120$
- 3) $36,000 \div 600$
- 4) $42,000 \div 70$
- 5) $60,000 \div 2,000$
- 6) $34 + 28$
- 7) $70 - 33$
- 8) $83 + 56$
- 9) $700 - 36$
- 10) $7.2 \cdot 1000$
- 11) $7.2 \div 1000$
- 12) $0.054 \cdot 100$

Arithmetic.

Show your work.

- 13)
$$\begin{array}{r} 732 \\ 674 \\ 789 \\ 468 \\ 927 \\ + 316 \\ \hline \end{array}$$
- 14)
$$\begin{array}{r} 50607 \\ - 18639 \\ \hline \end{array}$$

$$\begin{array}{r} 15) \quad 32 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 16) \quad 35 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 17) \quad 43 \\ \times 11 \\ \hline \end{array}$$

- 18) By looking at #15, #16 and #17, what is the *trick* for multiplying by 11?

Cast out nines to check your answer.
Ignore ending zeroes!

$$\begin{array}{r} 19) \quad 765300 \\ \times 82600 \\ \hline \end{array}$$

$$\begin{array}{r} 20) \quad 4785 \\ \times 1589 \\ \hline \end{array}$$

Reduce each fraction.

$$21) \quad \frac{2}{8}$$

$$22) \quad \frac{14}{35}$$

$$23) \quad \frac{3600}{4500}$$

$$24) \quad \frac{48}{600}$$

Decimals.

$$25) \quad 87.5 + 7.35$$

$$26) \quad 302.47 - 4.6$$

$$27) \quad 51.8 - 4.26$$

$$28) \quad 212 - 0.03$$

Fractions.

29) $\frac{2}{15} + \frac{4}{15}$

30) $\frac{4}{5} + \frac{2}{15}$

31) $\frac{7}{11} - \frac{3}{5}$

32) $\frac{5}{12} - \frac{3}{20}$

33) $\frac{3}{8} \div \frac{6}{7}$

34) $\frac{3}{4} \cdot \frac{14}{15}$

35) $\frac{15}{16} \cdot \frac{20}{21}$

36) $\frac{8}{12} \div \frac{49}{77}$

37) $3745 \div 4$

38) $25257 \div 9$

39) $4300 \div 63$

40) $32900 \div 81$

Division. Leave your answers as mixed numbers (e.g. $3\frac{2}{5}$), and use short division if the divisor is only one digit.

Show your work on a separate sheet, if needed.

Make Flashcards!

Your teacher should tell you which of the below multiplication facts you need to make into flashcards. You should practice them *every day* until two weeks past the point that you know them *really well*, and then continue practicing them once per week. This will help you to do calculations quickly and accurately in the years ahead.

2•2 = 4	9•2 = 18
3•2 = 6	9•3 = 27
3•3 = 9	9•4 = 36
4•2 = 8	9•5 = 45
4•3 = 12	9•6 = 54
4•4 = 16	9•7 = 63
5•2 = 10	9•8 = 72
5•3 = 15	9•9 = 81
5•4 = 20	11•2 = 22
5•5 = 25	11•3 = 33
6•2 = 12	11•4 = 44
6•3 = 18	11•5 = 55
6•4 = 24	11•6 = 66
6•5 = 30	11•7 = 77
6•6 = 36	11•8 = 88
7•2 = 14	11•9 = 99
7•3 = 21	11•11 = 121
7•4 = 28	12•2 = 24
7•5 = 35	12•3 = 36
7•6 = 42	12•4 = 48
7•7 = 49	12•5 = 60
8•2 = 16	12•6 = 72
8•3 = 24	12•7 = 84
8•4 = 32	12•8 = 96
8•5 = 40	12•9 = 108
8•6 = 48	12•11 = 132
8•7 = 56	12•12 = 144
8•8 = 64	
13•2 = 26	16•2 = 32
13•3 = 39	16•3 = 48
13•4 = 52	16•4 = 64
13•13 = 169	16•16 = 256
14•2 = 28	18•2 = 36
14•3 = 42	18•18 = 324
14•14 = 196	25•2 = 50
15•2 = 30	25•3 = 75
15•3 = 45	25•4 = 100
15•4 = 60	25•5 = 125
15•5 = 75	25•6 = 150
15•15 = 225	25•25 = 625
Optional:	
13•5 = 65	18•3 = 54
14•4 = 56	18•4 = 72
14•5 = 70	18•5 = 90
16•5 = 80	25•8 = 200