

Name: \_\_\_\_\_

### Welcome to 6th Grade!

Hello Rising 6th Graders,

I am your new math teacher, Mrs. Ford. We will be working together for the next THREE years! I am so excited to meet you in the fall. That being said, I want you to be able to put your BEST FOOT forward starting math this year and so I am asking that you complete some math work over the summer to help you.

You will complete one page, front and back per week to review concepts that you learned in 5th grade. For each of the problems you are assigned, I am asking you to show ALL your work; specifically how you got to your answers. Your work should be NEAT, ORGANIZED and LEGIBLE.

I can't emphasize enough how important it is for you to have your multiplication facts MEMORIZED. If you do not, please invest in some flash cards and get to work on that over the summer; trust me, class will be easier if you have these memorized.

Below you will find a rubric that will help you see how your summer work is being graded. It will count as your first quiz grade in the fall.

Expectations	Description	Points
Completed the entire page assigned each week (this includes the quizzes)	All questions were answered and the answer was BOXED in or in case of multiple choice, CIRCLED so that it was legible	/10
Showed work for each problem solved	Clearly showed the work in the appropriate space. Worked out long hand multiplication & division clearly; showed all steps in order of operations or all steps in solving an equation	/10
Neatness	My work is legible and easy for my teacher/parent/friend to follow and clearly BOXES in my answer	/5
TOTAL		/25

*\*I have included an example of my expectations for showing work and neatness\**

Full Points (see example)	Half Points	No Points
Showed all work	Showed most of work	Did not show work
Answered all questions	Half completed	Less than half complete
Clearly legible & easy to read	Mostly readable, with a few areas being difficult to decipher	Very difficult to decipher, cannot see work clearly; numbers are easily misread

**Mixed Practice**

Date:

Express your answer as a fraction in simplest form.

1.  $\frac{2}{3} \times 0.4$

$\frac{4}{3} \times \frac{4}{10}$  tens

$\frac{16}{15} = 1\frac{1}{15}$

2.  $-\frac{1}{4} \div 1.5$   $\frac{1}{2}$

$-\frac{7}{4} \div \frac{3}{2}$

$-\frac{7}{4} \cdot \frac{2}{3} = -\frac{7}{6} = -1\frac{1}{6}$

3.  $-6\frac{1}{10} - (-2.5)$

$-\frac{61}{10} + 2\frac{1}{2}$

$-\frac{61}{10} + \frac{5}{2}$

$-\frac{61}{10} + \frac{25}{10} = -\frac{36}{10}$

$-\frac{36}{10} = -\frac{36 \div 2}{10 \div 2} = -\frac{18}{5} = -3\frac{3}{5}$

Express your answer as a decimal.

4.  $-1.875 \times 1\frac{1}{6}$

$1.875 \times 1.166$

```

1.875
x 1.166
-----
11250
112500
187500
1875000
-----
2186250

```

$-2.186250$

5.  $-\frac{3}{8} - 2.7$

$-.375 - 2.7$

$2.700$   
 $-.375$   
 $-2.325$

6.  $-\frac{3}{4} + 1.3$

$-.75 + 1.3$

$1.30$   
 $-.75$   
 $.55$

$8 \overline{) 3.00}$   
 $24 \downarrow$   
 $60$   
 $56$   
 $4$   
 $1.16$   
 $6 \overline{) 1.00}$   
 $6 \downarrow$   
 $40$   
 $36$   
 $4$

Week 1

## Whole Numbers & Place Value

expanded form:

$$175 \\ 100 + 70 + 5$$

Word form:

175  
one hundred  
seventy-five

< less than  
> greater than

© Gina Wilson (All Things Algebra®, LLC), 2019

Date:

Give the place and value of each underlined digit.

1. 5,328,109      2. 1,903,625      3. 48,937,003

4. Write **832,503** in expanded form and word form.

Write each number in standard form:

5. sixty-five thousand, seven hundred four  
6. ten million, four hundred thousand, ninety-eight

Compare using a less than or greater than symbol.

7. 37,491 ○ 37,905      8. 10,502,392 ○ 9,972,835

Week 1

## Rounding Whole Numbers

Rounding Rules

If the # after is less than 5, stays the same.

5 or more?  
round up one.

© Gina Wilson (All Things Algebra®, LLC), 2019

Date:

Round each number to the indicated place value.

1. 152,032,491; ten million  
2. 741,582; thousand  
3. 2,274,382; hundred thousand  
4. 39,476,041; hundred  
5. 14,901,672; million  
6. 807,561,783; ten thousand  
7. Write the number "Six hundred forty-seven thousand, four hundred two" in standard form, then round to the nearest thousand.

Week 1

**Adding & Subtracting Whole Numbers**

Line your numbers up by place value

$$\begin{array}{r} 10,563,240 \\ - 772,653 \\ \hline \end{array}$$

Date:

Find each sum or difference.

1.  $1,583,283 + 395,359$

2.  $6,483 + 27,174$

3.  $20,052 - 14,385$

4.  $385,000 - 59,712$

5. Carol earned 17,305 miles by using her credit card last month. This was 3,504 more miles than she earned the previous month. Find the total number of miles she earned in the past two months.

Week 1

**Multiplying & Dividing Whole Numbers**

Line #'s up by place value

multiplying →

$$\begin{array}{r} 645 \\ \times 32 \\ \hline 1290 \end{array}$$

0 ← add 1 zero and line

Dividing

$$\begin{array}{r} 680 \div 20 \\ \downarrow \uparrow \\ 20 \overline{) 680} \end{array}$$

Date:

Find each product or quotient.

1.  $237 \cdot 72$

2.  $1,026 \div 57$

3.  $415 \div 18$

3. A lion can run 72 feet in one second. How far can the lion run in one minute?

4. If there are 250 boy scouts from a region going on a camping trip and each tent can hold 8 scouts, how many tents are needed?

Week 2

### Divisibility Rules

- 2: # is even
- 3: #'s add up to a # divisible by 3  
i.e. 45 (4+5=9)  
can divide 9 by 3.
- 4: last 2 digits are divisible by 4.
- 5: ends in a 5 or 0
- 6: is divisible by 3 and 2
- 9: #'s add up to a # divisible by 9
- 10: ends in zero

© Gina Wilson (All Things Algebra®, LLC), 2019

Date:

Use divisibility rules to determine if each number is divisible by 2, 3, 4, 5, 6, 9, or 10. If the number is not divisible by any of these, write "none".

1. 235

2. 671

3. 1,520

4. 495

5. 708

6. 1,314

Week 2

### Whole Number Operations Applications

- Step 1:  
what are you trying to find?
- Step 2:  
what operation will help you solve the problem?
- Step 3:  
what information or # values are you given?
- Step 4:  
write your equation + solve.

© Gina Wilson (All Things Algebra®, LLC), 2019

Date:

Read each problem carefully and solve.

1. Karen read a book with 689 pages. She read 41 pages each day except the last day. How many days did Karen spend reading the book? How many pages did she read on the last day?
2. The population of a city was 329,003 in 2018. This was 6,895 less than the population in 2015. Find the population in 2015.
3. Clay puts an average of 1,128 miles on his car each month. At this rate, how many miles will Clay put on his car in 5 years?

Week 2

### Prime Factorization

Prime: a # only divisible by 1 and itself  
 i.e. (1, 2, 5, 7, ...etc)  
 -Make a factor tree



prime!  
 to show its "factorization" we show how it's multiplied w/ only prime #s  
 $2 \times 2 \times 3 \times 3$  OR  $2^2 \times 3^2$

Date:

List the factors of each number.

1. 28

2. 90

State whether the number is prime or composite.

3. 97

4. 249

5. 183

Give the prime factorization of each number.

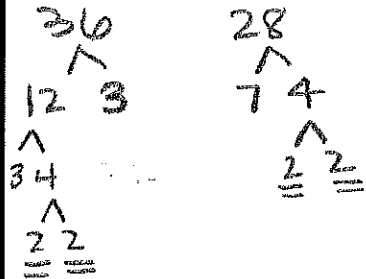
6. 448

7. 396

Week 2

### Greatest Common Factor (GCF)

-create a factor tree for both #s.  
 -multiply only the prime #s they have in common (ignore the rest)



GCF =  $2 \times 2$   
 = 4

Date:

Find the GCF of each set of numbers.

1. 32 and 48

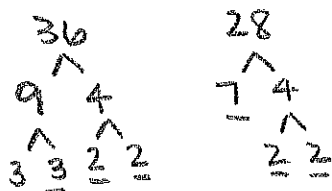
2. 108 and 189

3. Graham has 80 blue, 48 red, and 112 yellow balloons.  
 What is the greatest number of balloon arrangements he can make if he wants each arrangement to be the same?  
 How many of each color with each arrangement receive?

Week 3

### Least Common Multiple (LCM)

- create a factor tree for both #s.
- multiply the most of each prime # in the trees.



most of each #

• 2: 2  
• 3: 2  
• 7: 1

LCM =  $2 \times 2 \times 3 \times 3 \times 7$   
 $4 \times 9 \times 7$

Date:

Find the LCM of each set of numbers.

- 27 and 45
- 8 and 52
- Flora is buying apples, oranges, and bananas to create fruit baskets. Apples come in bags of 12, oranges come in bags of 9, and bananas come in bunches of 5. If she wants the same number of each fruit, how many of each will she need to buy?

Week 3

### GCF & LCM Applications

GCF key words

- equal #
- distribute equally
- most of each

LCM key words

- same # of each
- arrive @ the same time
- every; both/ same

Date:

Determine whether you are using a GCF or LCM to solve the problem. Then solve.

- The library has 126 pencils and 84 bookmarks to give away to children in their morning program. If they wish to give each child an equal number of bookmarks and pencils, what is the maximum number of children they can distribute the materials to if there are none left over? How many pencils and bookmarks will each child receive?
- Darren and Cora begin walking at the same place on a walkway that surrounds a lake. To go once around the lake, it takes Darren 24 minutes and Cora 32 minutes. Once they begin, after how many minutes will they be in the same place again?

Week 3

### Writing & Simplifying Fractions

improper: larger # on top

$$4\frac{3}{5} \rightarrow \frac{23}{5}$$

mixed #

$$\frac{48}{9} \rightarrow 9\frac{48}{45} = 9\frac{3}{3} = 10\frac{1}{3}$$

use GCF to simplify

$$\frac{16 \div 4}{28 \div 4} = \frac{4}{7}$$

Date:

Write each number as an improper fraction.

1.  $3\frac{1}{5}$

2.  $2\frac{6}{7}$

Write each fraction as a mixed number.

3.  $\frac{32}{9}$

4.  $\frac{97}{4}$

Simplify. Write your answer as a mixed number when possible.

5.  $\frac{28}{40}$

6.  $\frac{27}{36}$

7.  $2\frac{12}{50}$

8.  $\frac{64}{24}$

9.  $\frac{20}{12}$

10.  $\frac{75}{9}$

Week 3

### Equivalent Fractions & Comparing Fractions

to get a equivalent

$$\frac{3}{5} \xrightarrow{\times 3} \frac{9}{15}$$

Multiply/divide by the same # on top + bottom.

Are they equiv?

Do they simplify to the same fraction?

Date:

Write a number in the box that makes the fractions equivalent.

1.  $\frac{8}{6} = \frac{\square}{36}$

2.  $\frac{\square}{9} = \frac{21}{27}$

Determine whether the fractions are equivalent.

3.  $\frac{20}{48}$  vs  $\frac{30}{72}$

4.  $\frac{8}{12}$  vs  $\frac{18}{32}$

5.  $\frac{35}{20}$  vs  $\frac{14}{8}$

Place a <, >, or = symbol in the circle to compare the fractions.

6.  $\frac{3}{4} \bigcirc \frac{7}{9}$

7.  $\frac{5}{12} \bigcirc \frac{3}{8}$

8.  $\frac{8}{3} \bigcirc \frac{11}{4}$

9.  $\frac{7}{12} \bigcirc \frac{14}{24}$

10.  $\frac{1}{4} \bigcirc \frac{3}{14}$

11.  $\frac{37}{20} \bigcirc \frac{15}{8}$

Week 4

**Adding & Subtracting Fractions**  
(Like Bases)

Keep the denominator the same.

Add/ Subtract the numerators.

i.e.

$$\frac{16}{24} - \frac{8}{24} = \frac{8}{24}$$

$$\frac{7}{16} + \frac{8}{16} = \frac{15}{16}$$

Date:

Find each sum or difference. Write your answer in simplest form and as a mixed number where possible.

1.  $\frac{19}{20} + \frac{16}{20}$

2.  $1\frac{4}{9} - \frac{7}{9}$

3.  $\frac{23}{24} - \frac{5}{24}$

4.  $3\frac{5}{8} + 1\frac{7}{8}$

5. Kent ran  $3\frac{11}{12}$  miles and Trey ran  $5\frac{1}{12}$  miles. How much further did Trey run than Kent?

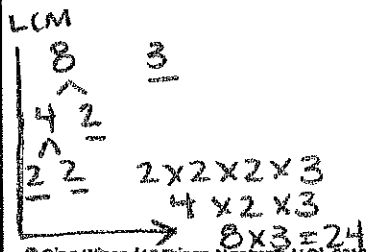
Week 4

**Adding & Subtracting Fractions**  
(Unlike Bases)

You must create like bases! Find the LCM to create a common denominator.

$$\frac{3}{8} + \frac{2}{3} \quad \begin{matrix} 2 \times 8 \\ 3 \times 8 \end{matrix}$$

$$\frac{3 \times 3}{8 \times 3} = \frac{9}{24} + \frac{16}{24} = \frac{25}{24}$$



Date:

Find each sum or difference. Write your answer in simplest form and as a mixed number where possible.

1.  $\frac{3}{8} + \frac{5}{24}$

2.  $6\frac{7}{10} - 5\frac{1}{5}$

3.  $4\frac{5}{12} + 1\frac{1}{4}$

4.  $5\frac{5}{6} - \frac{3}{4}$

5. Lana bought  $1\frac{5}{18}$  pounds of sliced turkey and  $1\frac{7}{12}$  pounds of sliced ham. How many total pounds of meat did she buy?

Week 4

### Multiplying Fractions

#1 - can you cross simplify?

i.e.  $\frac{1}{8} \cdot \frac{4}{9}$  are both divisible by 3  
 $\frac{1}{8} \cdot \frac{4}{9}$  are both divisible by 4  
8+4 are both divisible by 4 so we divide them both by 4

#2 NOW we multiply across.

$$\frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$$

sometimes we cannot cross simplify.

Date:

Find each product. Write your answer in simplest form and as a mixed number where possible.

1.  $\frac{4}{9} \cdot \frac{3}{14}$

2.  $2\frac{1}{4} \cdot \frac{8}{15}$

3.  $1\frac{1}{20} \cdot 3\frac{5}{9}$

4.  $3\frac{3}{5} \cdot 2\frac{1}{12}$

5. When Sam planted a tree, it was  $4\frac{7}{8}$  feet tall. If the tree is now  $1\frac{1}{3}$  times as tall as when he planted it, find the height of the tree.

Week 4

### Dividing Fractions

K. S. F.  
Keep  
+  
Flip

keep the 1st fraction  
Switch to multiplication

Flip the second fraction (inverse)

then cross simplify or multiply across

$$\downarrow \frac{9}{10} \div \frac{2}{5} = \frac{9}{2} \cdot \frac{5}{2} = \frac{9}{4}$$

Date:

Find each quotient. Write your answer in simplest form and as a mixed number where possible.

1.  $\frac{9}{10} \div \frac{3}{15}$

2.  $1\frac{1}{24} \div \frac{15}{16}$

3.  $\frac{3}{8} \div 1\frac{7}{20}$

4.  $7\frac{1}{3} \div 8$

5. A runner ran  $50\frac{2}{3}$  yards in  $11\frac{1}{5}$  seconds. Approximately how many yards did he run each second if he averaged the same pace?

Week 5

### All Fraction Operations

Follow order of operations

(#7 + #8)

1) Parentheses

2) Exponents

3) MD mult + div

4) AS add + sub

whichever comes 1st.

Date:

Evaluate.

1.  $\frac{2}{3} + \frac{1}{12}$

2.  $1\frac{7}{10} - \frac{5}{6}$

3.  $2\frac{4}{9} + 1\frac{5}{12}$

4.  $\frac{8}{21} \cdot 3\frac{3}{4}$

5.  $2\frac{2}{15} \cdot 1\frac{7}{18}$

6.  $\frac{9}{10} \div \frac{6}{14}$

7.  $(\frac{17}{18} - \frac{1}{2}) \div 10$

8.  $1\frac{3}{4} - \frac{9}{20} \cdot \frac{5}{24}$

Week 5

### Applications with Fraction Operations

#1 What are you trying to find?

#2 What operation do you need to use?

#3 Write your equation

#4. Solve.

Date:

1. Each walk around the block is  $1\frac{7}{15}$  miles. If Valencia walked around the block  $4\frac{7}{12}$  times, how far did she walk?

2. Kate watched  $\frac{3}{20}$  of a movie on Friday, then  $\frac{4}{15}$  more of the movie on Saturday. What fraction of the movie does she have left to watch?

3. A jug of laundry soap contains  $40\frac{5}{6}$  ounces. If Alex uses  $1\frac{7}{9}$  ounces of laundry, how many loads can he wash?

Week 5

## Decimals & Place Value

0	1	2	3	4	5
	ten	ones	tenths	hundredths	thousandths

+ 10  
+ 100  
+ 1000

Date:

Write the number as a decimal in standard form:

- sixty-eight and fourteen hundredths
- eleven and one-hundred and five thousandths

Write the decimal in word form:

- 23.7
- 0.0082
- Order from least to greatest: **0.602, 0.097, 0.0042, 0.83**

Round each number to the indicated place value.

- 0.9152; hundredths
- 1.046813; ten-thousandths
- 21.995; tenths

Week 5

## Adding & Subtracting Decimals

Line up the decimals.

Put a zero as a place holder if it doesn't line up. Add + subtract like normal. Keep the decimal in the same place.

$$15.35 - 4.2$$

$$\begin{array}{r} \downarrow 15.35 \\ - 4.20 \\ \hline 11.15 \end{array}$$

Date:

Find each sum or difference.

- $4.879 + 0.732$
- $17.25 - 9.1$
- $8.17 + 2.993$
- $24 - 16.79$
- Sarah bought a pair of jeans for \$24.95. If she paid \$1.28 in tax and handed the cashier \$30, how much change did she get back?
- There was 4.71 inches of snow on the ground before a snowstorm brought 15.9 inches. Find the total inches of snow on the ground after the storm.

Week 6

### Multiplying Decimals

Line up the #'s by place value, not decimal!

→ 4.32(6.1)  
→ 4.32 × 6.1

$$\begin{array}{r}
 432 \\
 \times 61 \\
 \hline
 432 \\
 25920 \\
 \hline
 26552 = 26.552
 \end{array}$$

count # of #'s after decimal, move that many places left

$$\begin{array}{r}
 4.32 \\
 \times 6.1 \\
 \hline
 \end{array}$$

© Gina Wilson (All Things Algebra®), LLC, 2019

Date:

Find each product.

1.  $7 \times 5.6$

2.  $9.16 \times 2.4$

3.  $0.39(8.57)$

4.  $5.5(1.092)$

5. To mail a letter, it costs \$0.48 for the first ounce, then \$0.20 for each ounce thereafter. Find the cost to mail a letter that weighs 4.95 ounces.

Week 6

### Dividing by Whole Numbers

Bring the decimal point straight up.

$4.8 \div 4$

$$\begin{array}{r}
 1.2 = \boxed{1.2} \\
 4 \overline{) 4.8} \\
 \underline{4} \phantom{0} \\
 08 \\
 \underline{8} \\
 0
 \end{array}$$

Date:

Find each quotient.

1.  $3.25 \div 5$

2.  $49.6 \div 8$

3.  $\frac{9.5}{4}$

4.  $\frac{94.08}{12}$

5. An elevator climbed 67.8 feet in 6 seconds. How many feet per second was the elevator moving if it maintained a constant speed?

© Gina Wilson (All Things Algebra®), LLC, 2019

Week 6

### Dividing by Decimals

can't divide by decimal.  
must move decimal until you have a whole #.  
move the inside decimal as well.

$$15.4 \div 0.2 = \boxed{77}$$

$$\begin{array}{r}
 0.2 \overline{) 15.4} \\
 \underline{14} \phantom{0} \\
 14 \phantom{0} \\
 \underline{14} \\
 0
 \end{array}$$

leave dec here!

Date:

Find each quotient.

1.  $3.12 \div 0.6$

2.  $47.5 \div 2.5$

3.  $\frac{56.7}{3.24}$

4.  $\frac{31.46}{0.052}$

Week 7

### All Decimal Operations

Follow order of operations

#1 M/D - whichever comes 1st  
#2 A/S - whichever comes first

$$17 - 2 + 6$$

$$\checkmark 15 + 6 = 21$$

$$14 \div 2 = 7$$

$$\underline{7} \cdot 7 = 49$$

Date:

Evaluate.

1.  $15.7 - 6.92 + 74.9$

2.  $8.3 \times 5.9$

3.  $0.79(162.3)$

4.  $4.68 \div 9$

5.  $13.5 \div 1.2$

6.  $\frac{8.8}{0.32}$

Week 7

### Applications with Decimal Applications

#1  
What are they asking you to find?

#2  
What operation do you need?

#3  
Write an equation

#4  
Solve.

Date:

- Rick is losing weight at an average of 0.328 pounds per day. If his current weight is 203.16 pounds, find his weight after 16 days.
- Mora has \$27.80 available on her coffee shop gift card. If each cup of coffee costs \$1.60, how many more cups can she buy?

Week 7

### Fraction & Decimal Conversions

Dec → Fract  
Use place value

$$0.76 = \frac{76}{100} = \frac{19}{25}$$

$$0.6 = \frac{6}{10} = \frac{3}{5}$$

Fract → Decimal  
divide the denom.  
by the numerator.

$$\frac{1}{5} = 5 \overline{) 1.0} = 0.2$$

$$\textcircled{2} \frac{3}{5} = 5 \overline{) 3.0} = 0.6$$

Date:

Write each decimal as a fraction in simplest form.

1. 0.2

2. 4.64

3. 1.575

Write each fraction as a decimal.

4.  $\frac{1}{8}$

5.  $3\frac{9}{20}$

6.  $\frac{25}{3}$

7.  $2\frac{7}{11}$

8.  $\frac{2}{15}$

9.  $\frac{17}{6}$

