Summer Math Packet
for
Rising Pre-Algebra Seventh Graders

We encourage all students to set aside some time for academics over the summer months to help make the transition back into the classroom in August more positive. This packet includes a review of sixth grade arithmetic skills considered to be prerequisite to our seventh grade math courses.

What is your responsibility toward the work in the packet?

• This is REQUIRED. No exceptions.
• CALCULATORS ARE NOT ALLOWED!
• Complete each set in the order given in your own packet on notebook paper identifying each set as #1, #2, etc. at the beginning of the set.
• Record your final answer in the answer blanks provided on this summer packet.
• Put your copied problems and your completed work in order in a bradded folder using the brads to hold your work.
• Bring your completed work in brads in your bradded folder to class on the first day of school when classes meet.
• Behind your work, include this summer packet with your recorded final answers in the answer blanks provided, and then complete the Pledge page at the end of this document and make sure this is the last page in your bradded folder in brads.
• A test over the summer material will be given within the first two weeks of school.

The Math Department will hold summer help sessions for all students to provide the necessary support in completion of this work. A math faculty member will be available every Tuesday, June 4 through August 6, from 9 A.M. to 12 noon. Inquiry in the Upper School Office may be made for the room assignment.

Enjoy your summer and happy calculating!

If you have any questions about this packet, please contact the teachers below.

Mr. Phillip Stalls    phillip.stalls@musowls.org
Mr. Darin Clifft    darin.clifft@musowls.org
Ms. Heather Davis    heather.davis@musowls.org
**OPERATIONS WITH WHOLE NUMBERS**

**SKILL #1: ADDITION**

1. $731 + 42 + 100$
2. $3200 + 800 + 99 + 9$
3. $1 + 11 + 1, 101 + 2,011$
4. $3,005 + 23 + 36,011$
5. The sum of 96, 9, 231, 139, and 2,007
6. Omar has 42 classical pieces of music, 78 pieces of pop music, and 56 pieces of rap music on his playlist on his iphone. How many total songs are on his playlist?

**SKILL #2: SUBTRACTION**

1. $2803 – 532$
2. $40,317 – 8,234$
3. $98,217 – 463$
4. $29,003 – 9,269$
5. $112,130 – 16,832$
6. Subtract 1,148 from 1,355
7. From 21,093 subtract 20,897
8. Subtract 999 from 2,111
9. The difference between 100,923 and 9,031
10. Tom weighed 136 pounds. At the end of two months of exercising, Tom now weighs 128 pounds. How much weight did Tom lose?
11. Lakeside High School prints 15,000 raffle tickets. The twelfth grade sells 13,483. How many tickets are left?
12. Manuel, a plumber, has several pieces of pipe on his truck. He has a 6-foot, 7-foot, 9-foot and 13-foot piece. If he uses 15 feet of pipe on a job, how many feet of pipe are left?
13. During inventory, the librarian finds that of the 2,482 books on the shelves, 482 are biographies, 726 are art books, and 534 are mysteries. The rest are fiction stories. How many books are fiction stories?
14. What is twenty-five thousand, four hundred minus eleven thousand, three hundred seventy-eight?
SKILL #3: MULTIPLICATION

1. 222 X 22
2. 1,103 X 112
3. 2,963 X 6,291
4. 6,345 X 504
5. 10,782 X 409
6. Find the product of 803 and 4,034.
7. What is the result of 178 times 6,307?
8. Triple 34,303.
9. Double 150,000.
10. James decides to save $15 per week. With 52 weeks in a year, how much will he have saved by the end of the year?
11. Noah is totaling the amount of money collected from ticket sales for the drama club’s play. They sold 506 tickets for $7 at the student price and 248 for $9 at the adult price. What is the total amount of money they collected?
12. Laura’s cat has 5 kittens. Each kitten eats 3 ounces of kitten food per day. How many ounces of food do the five kittens eat in a 7-day period?
13. Each ream of printer paper contains 500 sheets. How many sheets of paper are contained in 19 reams of paper?
14. The family’s new hybrid automobile is getting 45 miles on a gallon of gas. How many miles can be traveled on a total of 200 gallons of gas?

SKILL #4: DIVISION

1. 4550 ÷ 7
2. 2,760 ÷ 23
3. 21,730 ÷ 53
4. 29,056 divided by 32
5. 7,777 divided by 11
6. 19 divided into 15,238
7. Kip has a job after school. He earned $868 over a 14-week period. What is Kip’s average weekly salary?
8. Adam’s car gets 23 miles on a gallon of gas. How many gallons will he use to take a 4,715 miles trip?
9. The seventh graders took a field trip to a farm in Greenwood, MS. If there were 245 students and chaperones traveling by buses with 36-passenger capacity each, how many buses must be leased for this trip?
10. An airplane leaves at 2 p.m. from Burtonville and arrives at Meadowvale 1,095 miles away at 5 p.m. Find the average speed of the airplane in miles per hour.
OPERATIONS WITH DECIMALS

SKILL #5: ADDITION

1. 78 + 0.045 ______________________
2. 2.34 + 10 + 14.599 ______________________
3. 7 + 0.346 + 12.8 + 4.036 ______________________
4. The sum of 0.304 + 8.9 + 34.337 ______________________
5. One rainy week, it rained 2.5 inches on Monday, 1.63 inches on Tuesday, and 3 inches on Wednesday. What is the total rainfall for these three days? ______________________
6. Terrell goes to the store and buys apples for $2.95, an energy drink for $1.75, and two protein power bars for $3.53. All prices include tax. How much did he spend at the store? ______________________
7. Refer to #6. If Terrell paid with a $20 bill, how much money was left? ______________________
8. Corey’s dog, Mayberry, has three puppies. Their weights are 8.2 ounces, 5.12 ounces, and 6 ounces. What is their total weight? ______________________

SKILL #6: SUBTRACTION

1. 12.5 – 4.2 ______________________
2. 326 – 1.089 ______________________
3. 144 – 78.24 ______________________
4. 0.899 – 0.888 ______________________
5. 5.6 – 0.6 ______________________
6. From 235.01 subtract 0.999 ______________________
7. From 3.83 subtract 0.83 ______________________
8. Take away 2.3 from 8 ______________________
9. Subtract 0.35 from 13.7 ______________________
10. Take 0.99 from 8 ______________________
11. Marco weighs 135 pounds before he goes on a sugar free diet. He loses 5.6 pounds. How much does Marco weigh after his diet? ______________________
12. Marshall purchases a pair of skates for $128.55 including tax. He gives the salesperson five $20 bills and three $10 bills. How much change does he receive? ______________________
13. To play lacrosse, Chandler purchased the necessary equipment including $98 for the stick, $45.40 for the pads and another $105.30 for the helmet. How much was left out of the $250 allotted by his parents for the entire purchase? ______________________
14. Michael earns $125 on Saturday for cutting five lawns. His expenses include $4.50 for gasoline, $20 for paying his younger brother to help, and setting aside $25 for his savings account. How much did he have left over? ______________________
**SKILL #7: MULTIPLICATION**

1. $77 \times 0.11$
2. $24.2 \times 944$
3. $0.12 \times 1.1$
4. $2.73 \times 0.069$
5. $5.6 \times 0.98$
6. $0.0067 \times 48.8$
7. $32 \times 0.0004$
8. $0.021 \times 3$
9. The product of $1.035 \times 0.25$
10. To the nearest cent, what is the cost of $1.6$ pounds of grapes at $0.93$ per pound?
11. What is the total length of $65$ pieces of ribbon each $0.2$ meters long?
12. What is the total distance traveled at $35$ mph for $0.6$ hours?

**SKILL #8: DIVISION**

1. $1 \div 5$
2. $17.6 \div 0.32$
3. $2.7 \div 9$
4. $0.235 \div 0.005$
5. The quotient of $0.09$ and $0.004$
6. $5 \div 0.4$
7. $4.5 \div 145.35$
8. The quotient of $250$ and $0.25$
9. Divide the sum of $8.5$ and $5.3$ by $2$
10. Divide the difference of $14.3$ and $9.28$ by $4$
11. Divide the product of $0.21$ and $2.5$ by $3.5$
12. Divide $76.02$ by $3$ and then add $4.374$ to the answer.
13. Jeffrey buys some picture frame wire for $3.50. If the wire costs $0.60$ per foot, then how many feet of wire does he buy?
14. A plane flies $1,305.9$ miles in $3$ hours. What is the plane’s average speed?
15. Carl buys a $7.4$-pound roast for $32.56$. What is the cost of the roast per pound?
16. If a cyclist travels $60.5$ miles over a $5$-hour period, what is his average speed per hour?
OPERATIONS WITH FRACTIONS

SKILL #9: CONVERT THE IMPROPER FRACTION TO A MIXED NUMBER IN SIMPLEST FORM.

1. \( \frac{22}{16} \)  
2. \( \frac{45}{9} \)  
3. \( \frac{66}{13} \)

4. \( \frac{54}{7} \)  
5. \( \frac{121}{55} \)  
6. \( \frac{300}{200} \)

SKILL #10: CONVERT FROM A MIXED NUMBER TO AN IMPROPER FRACTION.

1. \( 3\frac{1}{2} \)  
2. \( 12\frac{1}{7} \)  
3. \( 15\frac{2}{5} \)

4. \( 4\frac{7}{9} \)  
5. \( 16\frac{3}{4} \)  
6. \( 10\frac{9}{10} \)

SKILL #11: ADDITION OF FRACTION WITH LIKE DENOMINATORS. Give answer in simplest form.

1. \( \frac{3}{12} + \frac{7}{12} \)  
2. \( \frac{3}{14} + \frac{4}{14} \)  
3. \( \frac{1}{6} + \frac{5}{6} \)

4. \( \frac{1}{15} + \frac{8}{15} \)  
5. \( \frac{11}{24} + \frac{7}{24} \)  
6. \( \frac{8}{22} + \frac{3}{22} \)
SKILL #12: ADDITION OF FRACTIONS WITH UNLIKE DENOMINATORS. Give answer in simplest form.

1. \(\frac{3}{8} + \frac{1}{2}\)  
2. \(\frac{2}{3} + \frac{1}{2}\)  
3. \(\frac{2}{3} + \frac{4}{5}\)

4. \(\frac{2}{7} + \frac{3}{8}\)  
5. \(\frac{3}{5} + \frac{1}{6}\)  
6. \(\frac{5}{12} + \frac{3}{5}\)

SKILL #13: ADDITION OF MIXED NUMBERS, WHOLE NUMBERS, AND FRACTIONS. Give the answer in simplest form.

1. \(\frac{7}{14} + \frac{2}{14}\)  
2. \(\frac{1}{2} + \frac{2}{9}\)  
3. \(\frac{4}{10} + 2\frac{3}{4}\)

4. \(15 + 2\frac{1}{3}\)  
5. \(\frac{7}{5} + 3\frac{2}{7}\)  
6. \(24\frac{3}{8} + 5\)

SKILL #14: SUBTRACTION OF FRACTIONS WITH LIKE AND UNLIKE DENOMINATORS with and without regrouping. Give the answer in simplest form.

1. \(\frac{5}{8} - \frac{5}{8}\)  
2. \(18\frac{7}{15} - \frac{4}{15}\)  
3. \(9 - \frac{4}{5}\)

4. \(19 - 2\frac{3}{8}\)  
5. \(15\frac{4}{9} - 13\frac{2}{9}\)  
6. \(50\frac{5}{12} - 45\frac{2}{3}\)
SKILL #15: MULTIPLICATION OF FRACTIONS. Simplify before you multiply where possible. Simplify all answers to lowest terms.

1. \( \frac{8}{16} \times \frac{5}{16} \)
2. \( \frac{1}{10} \times \frac{10}{17} \)
3. \( \frac{3}{4} \times \frac{8}{15} \)

4. \( 6 \times \frac{2}{3} \)
5. \( \frac{4}{5} \times \frac{1}{2} \)
6. \( \frac{2}{7} \times \frac{4}{3} \)

SKILL #16: DIVISION OF FRACTIONS. Remember to multiply by the reciprocal of the divisor. Express all answers in simplest form.

1. \( \frac{8}{5} \div \frac{4}{5} \)
2. \( \frac{9}{2} \div \frac{7}{10} \)
3. \( \frac{3}{4} \div \frac{5}{8} \)

4. \( \frac{6}{5} \div \frac{3}{5} \)
5. \( \frac{3}{5} \div \frac{38}{25} \)
6. \( \frac{1}{3} \div \frac{4}{3} \)

SKILL #17: EXPONENTS. Simplify each expression by writing out what each expression means (expanded form) and then simplify.

Example 1: Simplify \( 5^4 \). Solution: \( 5^4 \) means \( 5 \times 5 \times 5 \times 5 \) which equals 625.

Reminder: 5 is called the base, and 4 is called the exponent or power.

Example 2: Simplify \( 6^3 \). Solution: \( 6^3 \) means \( 6 \times 6 \times 6 \) which equals 216.

Reminder: 6 is called the base, and 3 is called the exponent or power.

1. \( 3^4 \)
2. \( 9^2 \)
3. \( 1^6 \)
4. \( 7^3 \)
5. \( 4^3 \)
6. \( 2^5 \)
SKILL #18: ORDER OF OPERATIONS. Reminder: When there are multiple operations in a math problem, we always follow a certain order for the computation. This is known as the “ORDER OF OPERATIONS.” The order we must follow is as follows:

STEP 1: P – Parenthesis. We must simplify the calculations within the parenthesis first.

STEP 2: E – Exponents. We must now simplify any exponents.

STEP 3: M/D – Multiplication -OR- Division LEFT TO RIGHT. You must do any multiplication OR division LEFT TO RIGHT first. If division comes first, you do the division first. If multiplication comes first, then you do the multiplication first.

STEP 4: A/S – Addition -OR- Subtraction LEFT TO RIGHT. You must any addition OR subtraction LEFT TO RIGHT next. If subtraction comes first, you do the subtraction first. If addition comes first, then you do the addition first.

Example Problem 1: Simplify \(13 + \frac{12}{2} \times 4 - 2 + 15\).

STEP 1 – There are no ( ) so we skip this step.

STEP 2 – There are no exponents so we skip that step.

STEP 3 – The first multiplication or division sign we come to as we scan the problem from left to right is a DIVISION sign. So we do that calculation first.

\[
13 + \frac{12}{2} \times 4 - 2 + 15 = 13 + 6 \times 4 - 2 + 15.
\]

NOW, we must do the multiplication that we see.

\[
= 13 + 24 - 2 + 15 = 13 + 24 - 2 + 15
\]

STEP 4: Now, we simplify by adding/subtracting from left to right:

\[
\]

Therefore, 50 is the final answer.
Example Problem 2: Simplify $40 + 2(15 - 3 \times 4)^2$

Step 1: Simplify inside of the ( ) by using the correct order of operations. You must multiply $3 \times 4$ BEFORE you subtract because we multiply BEFORE we subtract.

So this problem becomes . . . 

$$40 + 2(15 - 12)^2$$

Now, we need to simplify the ( ) by subtracting 12 from 15.

So our problem looks like this now:

$$40 + 2(3)^2$$

Step 2: Simplify the exponent $\rightarrow 3^2$

So now we have . . . 

$$= 40 + 2(3)^2$$

$$= 40 + 2(9)$$ \{NOTE: $2(9) \text{ means } 2 \times 9\}

Step 3: Multiply/divide left to right.

$$= 40 + 2(9)$$

$$= 40 + 18$$

Step 4: Add/subtract left to right.

$$= 40 + 18$$

$$= 58$$ 58 is the final answer.

SKILL #18: ORDER OF OPERATIONS. Simplify each expression by following the correct order of operations.

1. $4 + 5 \times 6$ vs. $(4 + 5) \times 6$  
   \hfill \underline{_________} \quad ; \quad \underline{_________}$

2. $10 \div 5 + 8^2$ vs. $(10 \div 5 + 8)^2$  
   \hfill \underline{_________} \quad ; \quad \underline{_________}$

3. $15 - 2 + 45 \div 5$  
   \hfill \underline{_________}$

4. $(5 - 2)^2 + 18$  
   \hfill \underline{_________}$

5. $5^2 - 2^2 + 18$  
   \hfill \underline{_________}$

6. $6 + 4^2 - 10 \div 5$  
   \hfill \underline{_________}$

7. $65 - 4(3 + 2) + 6^2 \div 9$  
   \hfill \underline{_________}$

8. $100 \div 20 + 6 \times 13 - 14 \div 2 + 5^3$  
   \hfill \underline{_________}$
OPERATIONS WITH INTEGERS

SKILL #19: ADDING INTEGERS (RULE: Think money!)

Examples: + means you HAVE money; - means you OWE money. You always pay your debt as much as you can!

A) 4 + (-8) means “I have HAVE $4 and I owe $8. So I still OWE $4!” Answer: -4
B) -5 + (-3) means “I owe $5 and I owe $3. So I OWE $8!” Answer: -8
C) -6 + 9 means “I owe $6 and I have $9. I pay my debt so I still HAVE $3 in my pocket.” Answer: +3
D) 15 + (-4) means “I have $15 and I owe $4. So I HAVE $11 in my pocket.” Answer: +11

1. -4 + (-7) _______________
2. -2 + 8 _______________
3. -13 + (-8) _______________
4. 16 + (-10) _______________
5. -53 + 28 _______________
6. -18 + (-4) _______________

SKILL #20: SUBTRACTING INTEGERS. (Remember to “add the opposite” when you are subtracting!)

Examples:

B) -8 - 10 turns into -8 + (-10) = -18. {You can also think of this problem as “owing $8 and owing $10!”}
C) 3 - (-9) turns into 3 + (-9) = 12.

Simplify:

1. -8 - (-3) _______________
2. 9 - 15 _______________
3. -11 - 32 _______________
4. 17 - (-4) _______________
5. 5 - (-8) _______________
6. 5 - 8 _______________
7. -10 - 28 _______________
8. -10 - (-28) _______________
SKILL #21: MULTIPLYING AND DIVIDING INTEGERS

REMINDER: Sign Rules for $\times$ and $\div$

$(+)(+) = +$  $(+)(-) = -$  $(+) \div (+) = +$  $(+) \div (-) = -$  $(+) \div (+) = +$

Simplify:

1. $(8)(-4)$
2. $(-4)(-9)$
3. $(1)(-6)(-3)$
4. $(21)(-6)$
5. $(-8)(-7)$
6. $\frac{-81}{9}$
7. $\frac{-120}{-6}$
8. $\frac{42}{-7}$
9. $-196 \div -14$
10. $66 \div -6$
Please attach this page at the very end of your bradded folder.

IN YOUR BRADS IN YOUR BRADDED FOLDER,
you should have THREE things IN THIS ORDER . . .

(A) ON TOP: your work on loose leaf notebook paper with all your problems neatly numbered and clearly marked. Your problems should be titled, numbered and IN ORDER.

(B) IN THE MIDDLE: the original copy of the summer math packet with your answers filled in on the answer blanks provided.

(C) ON BOTTOM: this page checked off, pledged, and signed

MATH PERIOD: __________   NAME:________________________________________________

Answer the following questions by checking each box.

☐ I completed all work on loose leaf notebook paper with a #2 pencil.
☐ I did not use scratch paper.
☐ I copied all the problems as instructed.
☐ I did NOT use a calculator.
☐ My handwriting/work is neat, legible, and can be followed clearly by my teacher.
☐ I titled each set of problems on my paper and numbered the problems the same way as they were numbered in the packet.
☐ I followed all directions on each set of problems.
☐ I have put my work in a bradded folder in the order as described at the top of this sheet.
☐ I completed these problems without help from another person.
☐ I did receive help with particular CONCEPTS from (name and relationship to you):

__________________________________________________________

☐ MUS PLEDGE:

__________________________________________________________

__________________________________________________________

__________________________________________________________