

Summer 2019
Math Review Packet
For Students Entering 6th Grade

Dear Parents,

Welcome to Shady Side Academy Middle School. We are excited to have you join the Middle School Community of learners. As summer arrives, we at the Middle School hope you can find a nice balance between having fun, relaxing and continuing your learning experience in a variety of ways. With that in mind, we provide you with a review packet for mathematics.

While this packet is optional, we hope that the majority of the students will use the packet to help them retain what they learned during 5th grade mathematics. There is an answer key available. It can be found on the SSA Website Summer Info page (see link below) so that students can “self-check” their work as they go. If your child does not understand a specific concept or question, the solutions are presented on the answer key and can be used as a guide. The key should only be utilized to check completed work, or if they are stuck on how to complete a problem and have made a few attempts independently. Your child may need to revisit certain topics again in 6th grade to strengthen overall understanding. Do not be concerned, this is common for students to need extra review. Math curriculums spiral so repeating content from year to year is normal.

Have a fantastic summer; we will see you in the fall.

Sincerely,

Susan Short
MS Math Learning Coordinator

SSA Summer Info Page: <http://www.shadysideacademy.org/page.cfm?p=15607>

Section 1: Whole Number Calculations

Things to Remember:

- We learned to write numbers in standard form (ex. 557,676), word form (five hundred fifty-seven thousand, six hundred seventy-six), and expanded form ($500,000 + 50,000 + 7,000 + 600 + 70 + 6$) up to millions
- We studied place value up to millions (ex. 1,649,000)

| Millions | Hundred Thousands | Ten Thousands | Thousands | Hundreds | Tens | Ones |
|----------|-------------------|---------------|-----------|----------|----------|----------|
| 1 | 6 | 4 | 9 | 0 | 0 | 0 |

- We practiced comparing and rounding whole numbers

Mental Math: Use mental math to solve.

1. $199 + 25 =$ _____
2. $2300 - 38 =$ _____
3. $99 \times 57 =$ _____
4. $60 \times 25 =$ _____
5. $4000 \div 50 =$ _____

Write vertically and multiply or divide **on graph paper**. This will remind you of the importance of lining up numbers correctly and neatness!

1. 354×86
2. 579×32
3. 975×48
4. 641×60
5. $2,508 \times 19$
6. 634×28
7. 318×49
8. $21 \overline{) 89}$
9. $4 \overline{) 2528}$
10. $40 \overline{) 72}$
11. $80 \overline{) 543}$
12. $58 \overline{) 313}$

Section 2: Fractions

Things to Remember:

- When adding and subtracting unlike fractions you must use a common denominator
- Remember to multiply by the reciprocal. ("Keep, change, flip.")
- When converting a fraction to a decimal, remember to set the denominator equal to 10, 100, or 1000 if possible and create an equivalent fraction
- When multiplying fractions, you can choose to simplify the fractions before multiplying across (cross out method, whatever you divide by on the top you must divide by the same number on the bottom) or simplify the product after multiplying.

1. $\frac{3}{14} + \frac{1}{8} =$

2. $\frac{9}{10} - \frac{3}{4} =$

3. $\frac{8}{15} \times \frac{9}{20} =$

4. $\frac{5}{16} \times \frac{8}{9} =$

$$5. \frac{5}{6} \times 20 =$$

$$6. \frac{6}{15} \div 4 =$$

$$7. \frac{2}{7} \div 3 =$$

$$8. 4\frac{1}{2} - \frac{3}{5} =$$

$$9. 5\frac{3}{5} + 2\frac{5}{8} =$$

$$10. 4\frac{1}{12} - 2\frac{5}{8} =$$

Section 3: Problem Solving

Things to Remember:

- Read every problem at least twice before beginning to work.
- Utilize a strategy to help you solve the word problem. If you are familiar with bar models, please use that strategy.

Solve, and write your answer on the line. **SHOW YOUR WORK.**

1. Savannah used $2\frac{7}{8}$ quarts of paint on a summer project. She still had $5\frac{3}{8}$ quarts of paint left when she was finished. How much paint did Savannah have at first?

Solve, and write your answer on the line. SHOW YOUR WORK

2. Brian is $6\frac{1}{4}$ years old and Trevor is $2\frac{1}{2}$ years old. How much older is Bryan than Trevor?

3. Lauren bought 5 containers of yellow marbles and 3 containers of blue marbles. There were 112 marbles in each container. How many marbles did she buy altogether?

4. Number Riddle: I am between 15 and 25. I m a multiple of 5. I am a factor of 40. What number am I?

Solve, and write your answer on the line. SHOW YOUR WORK.

5. John, Kevin, and Andrew are counting their pennies. John has three times as many pennies as Kevin. If John and Andrew put their pennies in the same container, they'll have 266 pennies. However, if Kevin and Andrew put their pennies together, they will have 198 pennies. How many pennies does John have?

6. Brianna placed 215 erasers into 5 boxes. She placed 51 erasers in 3 of the boxes. If the rest of the erasers were split evenly between the two boxes, how many toys did Brianna have in each of the other 2 boxes?

Solve, and write your answer on the line. SHOW YOUR WORK.

7. Dillon bought 7 bags of grapes at the grocery store. Each bag weighs $\frac{2}{3}$ pound. Find the total weight of the bags of grapes in pounds.

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8. Nicole spent $\frac{3}{5}$ of her money on amusement park tickets and $\frac{2}{3}$ of the remainder on a new shirt. She had \$30 left. How much money did she spend altogether?

Solve, and write your answer on the line. SHOW YOUR WORK.

9. Ben and Jerry each had the same amount of money to start their beach vacation. Ben spent \$796 and Jerry spent \$528. After the vacation, Jerry had three times as much money left as Ben. How much did they each begin the vacation with?

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10. Greg buys $3\frac{7}{10}$ pounds of sugar and Kayla buys $2\frac{3}{4}$ pounds of sugar. They use $4\frac{3}{5}$ pounds of sugar while running their lemonade stand over the summer. How much sugar is left? Express your answer as a decimal as well.
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Solve, and write your answer on the line. SHOW YOUR WORK.

11. Francis reads $\frac{2}{9}$ of his favorite book in the morning and $\frac{1}{6}$ of it in the afternoon. He reads twice as many pages as he did in the afternoon the next day. What fraction of his favorite book is not read yet?

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12. Caroline had \$400. She spent $\frac{2}{5}$ of it on a new art set and $\frac{1}{3}$ of the remainder on a father's day gift. How much money did Caroline have left?

Section 4: Algebra

Things to Remember:

- We were introduced to the use of variables in algebra this past year – symbols, usually letters, used to represent a number in an expression or equation.
- We learned there is a difference between expressions and equations. Expressions can be numerical or algebraic (algebraic if they contain variables) and contain terms but no equal sign. Equations, on the other hand, are mathematical statements that state two expressions are equal. We are able to solve equations, but only simplify expressions by combining like terms.
- We learned that ORDER MATTERS – PEMDAS

Parentheses ● Exponents ● Multiplication ● Division ● Addition ● Subtraction

- Remember that multiplication and division do not need to be completed in that order only, if you are left with only those two operations you can simply work from left to right. The same goes for addition and subtraction!
- Also when working with algebraic expressions and equations, only like terms can be combined!

Simplify the following numeric expressions and write your answer on the line.

1. $24 \div 6 + 3 \times (6 - 4)$

2. $(38 - 14) \div 3 \times 4$

Simplify the following numeric expressions and write your answer on the line.

3. $54 - 12 \times (13 - 4) \div 3 + 6$

4. $7 \times 7 - (2 + 8)$

Simplify the following algebraic expressions and write your answer on the line.

5. $3 + 8k + 9 - 5k$

6. $8 + 12s - 7 - 9s + 4$

Simplify the following algebraic expressions and write your answer on the line.

7. $10w + 11 - 3w - 8$

8. $10 + 5h - 6 + 8h$

Solve the following algebraic equations for y and write your answer on the line.

9. $3y - 9 = 18$

$y =$ _____

10. $2y + 16 = 4y - 6$

$y =$ _____

Section 5: Decimals

Things to Remember:

- Ones . tenths hundredths thousandths
- We round decimals with the same rules that we do whole numbers! Look to the neighbor to the right to tell you what to do – if it's 5 or above give it a shove, 4 or below let it go.
- 10 thousandths = 1 hundredth, 10 hundredths = 1 tenth, 10 tenths = 1 whole
- When adding and subtracting decimals make sure the decimal points are lined up! When multiplying and dividing decimals be careful when moving your decimal around in the number!
- To convert fractions to decimals, find the equivalent fraction with 10, 100, or 1000.
- When going from a decimal to a fraction remember the connection – if your decimal has two decimal places (hundredths), your fraction is going to have 100 as the denominator! Reduce to simplest form!

1. Put in order from least to greatest: 10.2, 10.19, 10.01, 10.02
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2. Fill in $>$, $<$ or $=$ in each circle.

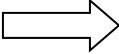
a. 0.8 $\frac{72}{100}$

b. 2.05 2.045

3. Complete each pattern.

a. 7, 6.8, _____, 6.4, _____, _____

b. 9, 9.25 _____, 9.75, _____, _____

| Fraction | Show your Work  | Decimal |
|-------------------------|---|---------|
| 4. | | 0.6 |
| 5. | | 0.75 |
| 6. $\frac{10}{25}$ | | |
| 7. $\frac{102}{10}$ | | |
| 8. $\frac{56}{11}$ | | |
| 9. $\frac{59}{1000}$ | | |
| 10. $2\frac{1}{4}$ | | |

Complete the following on graph paper.

Express the answer to two decimal places please.

11. $\frac{6}{7} =$ _____

12. $7\frac{2}{3} =$ _____

Add or subtract.

13. $4.6289 + 5.3210 =$ _____

14. $29.51 - 16.72 =$ _____

15. $794.52 + 653.78 =$ _____

16. $378.952 - 43.771 =$ _____