

## **Summer Math Assignments**

### ***Rising 7th Grade Students***

While the summer break is a good time to take a much-needed rest from academic work, because of the cumulative nature of math, it is also important to continue to practice some basic mathematical skills so that you do not lose any of the useful problem-solving and sense-making skills you have been developing in your math education.

The worksheets below involve mathematics that you have seen in previous courses. While the difficulty of these exercises vary, it should take you, on average, about 10 - 15 minutes to complete a page. Feel free to ask for help from a knowledgeable person when necessary.

You can either print these pages and then complete your work on the pages themselves, or view the pages digitally and complete your work on separate sheets of paper. **Many of the exercises below require that you write an explanation in a complete sentence or that you show your mathematical calculations.** We, the math teachers at St. Michael's, will collect your completed work during the first week of school.

A. **Which One Does Not Belong.** In each set of numbers, one number does not belong. Circle this number and explain why it does not belong with the others. (Consider such things as primes, composites, factors, and even spelling!) Then replace the number that does not belong with a number that does.

1. 2, 4, 7, 10 \_\_\_\_\_  
\_\_\_\_\_

2. 3, 5, 7, 9 \_\_\_\_\_  
\_\_\_\_\_

3. 12, 20, 26, 38 \_\_\_\_\_  
\_\_\_\_\_

4. 3, 4, 6, 9 \_\_\_\_\_  
\_\_\_\_\_

5. 2, 6, 12, 20 \_\_\_\_\_  
\_\_\_\_\_

6. 15, 20, 35, 85 \_\_\_\_\_  
\_\_\_\_\_

7. 9, 16, 20, 25 \_\_\_\_\_  
\_\_\_\_\_

8. 313, 1001, 111, 1313 \_\_\_\_\_  
\_\_\_\_\_

9. 3, 13, 31, 47 \_\_\_\_\_  
\_\_\_\_\_

10. 28, 30, 31, 32 \_\_\_\_\_  
\_\_\_\_\_

B. **Who Am I?** Answer the questions. Explain your reasoning.

1. I am the largest one-digit prime number.
2. I am the smallest two-digit prime number.
3. I have only one factor.
4. I am the only even prime number.
5. I am the largest two-digit prime number.
6. The number 59 and I are the only two prime numbers between 50 and 60.
7. If I am the units digit of any number, then the number is divisible by 10.
8. I am not the number 1, but I am a factor of 60 and 35.
9. I am a one-digit number. If you add all of my factors, the sum equals 12.
10. I am the largest one-digit number that has only three factors.
11. I am the first prime number after 100.
12. I am the largest composite number before 100.

C. **Odd Fraction Out.** In each set of fractions, one fraction is not equivalent to the other three. Circle this fraction, then replace it with a fraction from the Fraction Bank that is equivalent to the others in the set. Write this fraction on the line.

1.  $\frac{9}{15}$   $\frac{6}{8}$   $\frac{3}{5}$   $\frac{21}{35}$  \_\_\_\_\_

2.  $\frac{4}{6}$   $\frac{2}{3}$   $\frac{7}{8}$   $\frac{12}{18}$  \_\_\_\_\_

3.  $\frac{2}{9}$   $\frac{16}{72}$   $\frac{14}{63}$   $\frac{12}{90}$  \_\_\_\_\_

4.  $\frac{12}{15}$   $\frac{20}{25}$   $\frac{16}{20}$   $\frac{28}{30}$  \_\_\_\_\_

5.  $\frac{28}{32}$   $\frac{21}{24}$   $\frac{49}{56}$   $\frac{14}{18}$  \_\_\_\_\_

6.  $\frac{9}{21}$   $\frac{6}{14}$   $\frac{12}{27}$   $\frac{30}{70}$  \_\_\_\_\_

7.  $\frac{10}{12}$   $\frac{25}{36}$   $\frac{25}{30}$   $\frac{40}{48}$  \_\_\_\_\_

8.  $\frac{9}{15}$   $\frac{12}{16}$   $\frac{33}{44}$   $\frac{21}{28}$  \_\_\_\_\_

9.  $\frac{14}{22}$   $\frac{84}{132}$   $\frac{49}{121}$   $\frac{56}{88}$  \_\_\_\_\_

10.  $\frac{15}{36}$   $\frac{35}{84}$   $\frac{10}{60}$   $\frac{20}{48}$  \_\_\_\_\_

**Fraction Bank**

$\frac{12}{28}$	$\frac{20}{30}$	$\frac{55}{66}$	$\frac{8}{10}$	$\frac{10}{45}$
$\frac{49}{77}$	$\frac{6}{10}$	$\frac{60}{144}$	$\frac{42}{48}$	$\frac{18}{24}$

D. **Don't Be Redundant.** Some of the problems below are correct. For those that are, write 'correct'. For those that are incorrect, rewrite them so that they are correct.

1.  $\frac{7}{8} = 0.87$

2.  $\frac{3}{10} = 0.3$

3.  $\frac{5}{9} = 0.5$

4.  $\frac{1}{6} = 0.16$

5.  $\frac{3}{11} = 0.27$

6.  $\frac{5}{7} = 0.714$

7.  $\frac{2}{99} = 0.0\overline{2}$

8.  $\frac{1}{25} = 0.04$

9.  $\frac{5}{33} = 0.15$

10.  $\frac{4}{27} = 0.14\overline{8}$

11.  $\frac{3}{40} = 0.075$

12.  $\frac{15}{18} = 0.83$

13.  $\frac{9}{25} = 0.36$

14.  $\frac{25}{90} = 0.27$

15.  $\frac{3}{48} = 0.062$

E. **Out of Order.** All of the fractions in each set are supposed to be in ascending order, but at least one of the fractions in each set is out of order. Rewrite each set so that the fractions are in ascending order.

1.  $\frac{7}{25}$   $\frac{7}{20}$   $\frac{3}{10}$   $\frac{9}{25}$  \_\_\_\_\_

2.  $\frac{1}{3}$   $\frac{3}{4}$   $\frac{2}{5}$   $\frac{1}{2}$  \_\_\_\_\_

3.  $\frac{4}{5}$   $\frac{9}{10}$   $\frac{8}{9}$   $\frac{7}{8}$  \_\_\_\_\_

4.  $\frac{1}{4}$   $\frac{19}{50}$   $\frac{1}{2}$   $\frac{49}{100}$  \_\_\_\_\_

5.  $\frac{3}{4}$   $\frac{4}{5}$   $\frac{5}{7}$   $\frac{8}{9}$  \_\_\_\_\_

6.  $\frac{1}{3}$   $\frac{3}{8}$   $\frac{4}{7}$   $\frac{4}{9}$  \_\_\_\_\_

7.  $\frac{7}{9}$   $\frac{3}{4}$   $\frac{5}{8}$   $\frac{11}{15}$  \_\_\_\_\_

8.  $\frac{5}{13}$   $\frac{2}{9}$   $\frac{1}{5}$   $\frac{3}{11}$  \_\_\_\_\_

9.  $\frac{5}{11}$   $\frac{4}{9}$   $\frac{3}{5}$   $\frac{7}{8}$  \_\_\_\_\_

10.  $\frac{2}{3}$   $\frac{4}{5}$   $\frac{7}{8}$   $\frac{9}{11}$  \_\_\_\_\_

F. **Boxes and Numbers.** Complete the problems by filling in each box with the numbers 2, 4, 6, or 8 to find the answer described at right. Use only proper fractions in the problems and answers. Each number must be used once in each problem.

1.  $\frac{\square}{\square} + \frac{\square}{\square} =$  largest sum

2.  $\frac{\square}{\square} + \frac{\square}{\square} =$  smallest sum

3.  $\frac{\square}{\square} - \frac{\square}{\square} =$  largest difference

4.  $\frac{\square}{\square} - \frac{\square}{\square} =$  smallest difference

5.  $\frac{\square}{\square} \times \frac{\square}{\square} =$  largest product

6.  $\frac{\square}{\square} \times \frac{\square}{\square} =$  smallest product

7.  $\frac{\square}{\square} \div \frac{\square}{\square} =$  largest quotient

8.  $\frac{\square}{\square} \div \frac{\square}{\square} =$  smallest quotient

**G. Decimal Round Up.** In each set of numbers all except one can be rounded to the same place. Round each of the numbers, and circle the one that cannot be rounded to the same place as the others. Write your answers on the line beneath each set of numbers.

1. 0.25 0.31 0.35 0.342

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2. 0.322 0.324 0.333 0.315

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3. 8.76 8.84 8.95 8.41

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4. 37.152 38.152 37.9 37.54

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5. 150.352 150.41 150.393 150.45

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6. 1.3  $1.\bar{3}$  1.375 1.295

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7.  $1.\bar{8}$  1.84 1.89 1.932

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8. 15.375 15.35 15.285 15.426

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For problems 9 and 10, first change the fractions to decimals and then round. Circle the number that cannot be rounded to the same place as the others.

9.  $\frac{1}{3}$   $\frac{1}{4}$   $\frac{1}{5}$   $\frac{5}{6}$

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10.  $3\frac{3}{8}$   $3\frac{4}{9}$   $3\frac{2}{5}$   $3\frac{7}{8}$

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