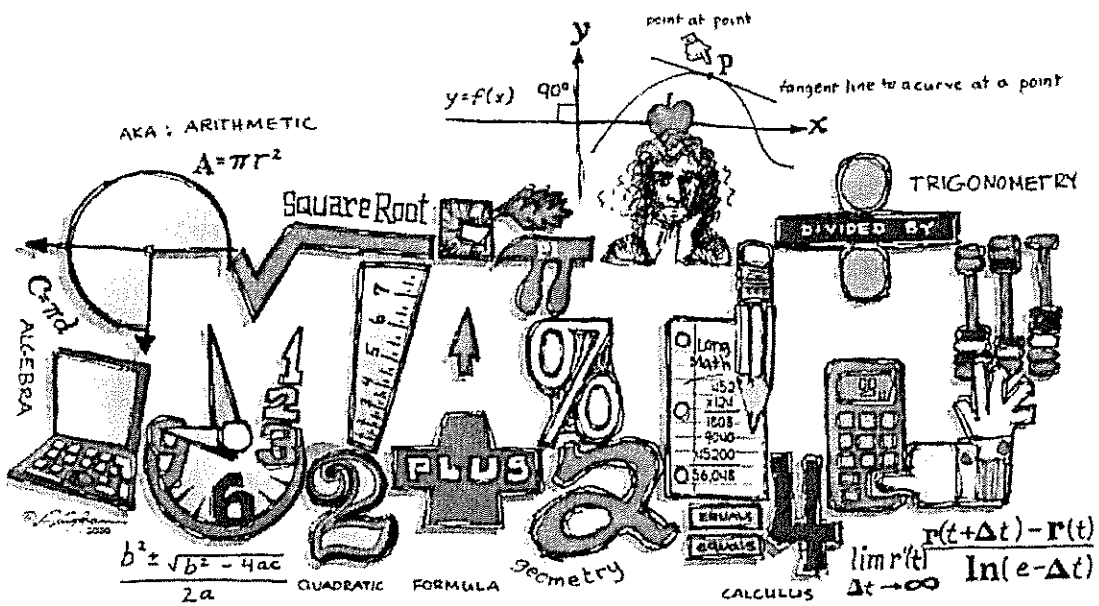


GRAYSLAKE MIDDLE SCHOOL

Summer Math Packet



for

7th Grade Math

Grayslake Middle School

Community Consolidated School District #46



Community Consolidated School District 46 will provide an educational environment that maximizes the potential of all students to be prepared for life's opportunities while developing a lasting appreciation for learning.

Dear Parents/Guardians:

This booklet has been prepared for students in order to enhance their mathematics skills over the summer months. The open-ended activities involve both skill development and problem solving. While most students should be able to do the pages independently, some students may need your help in developing a work plan and in managing their time. Students are expected to complete the entire packet and return it to school by the Friday of the second full week of school.

By fostering a positive approach to the completion of the mathematics packet, you will help your child to learn important math skills and concepts. In addition, your cooperation in assuring that the summer work is completed will contribute to your child's future success in middle school.

Best wishes to you and your family for an enjoyable summer!

Sincerely,

The Staff of GMS

TO ALL STUDENTS:

This packet is designed to help you remember the topics that you have covered this past year and to keep the concepts fresh in your mind for the coming school year.

You should do a little each week and not wait until the end of the summer to complete the work. It is important for you to know how to do the operations included **WITHOUT A CALCULATOR**. You must also **SHOW ALL OF YOUR WORK!**

Please take your time and do your best work. There will be time at the beginning of the year to ask a few questions, but the majority of the work must be completed before then. This packet is to be turned in to your math teacher no later than the Friday of the second full week of school. This packet is typically one of the first grades of the new school year.

Good luck and have a fun summer. See you next year!

The GMS Mathematics Teachers

Below are some websites that may assist you in figuring out how to do some of the problem in this packet:

www.aplusmath.com

www.math.com

www.mathisfun.com

www.aaamath.com

www.purplemath.com (Algebra)

FAQs

QUESTION: *How will the summer math packets be used when the students return to school?*

When the students return to school at the end of the summer, we will use these materials as one source to assess learning. Students will receive credit for returning the packet based on guidelines put in place by both the administration and teachers. In addition teachers will assess students based on the packet materials and this assessment will be used to identify needs of the students in the classroom. Most importantly, your son/daughter will have the confidence for the math to be learned in the coming year.

QUESTION: *What if I don't know the math or never found math to be my favorite subject?*

We are asking you to encourage your children to think of themselves as mathematicians who can reason and solve problems. Mathematics is their key to the future. Parents who communicate the importance of mathematics to their children can help them to develop confidence in their own math ability no matter what the comfort level of the parents. We need you to support this packet.

QUESTION: *Isn't this a lot to expect in one summer? Do they have to do it all?*

We do not expect students to do the packet all in one day! Or one sitting? Or the last week? Spread it out over the span of the two summer months. You know your children best. We expect to see a good effort for each student on his or her return.

QUESTION: *Can't we have an answer key?*

We are interested in assessing what our children have actually learned and retained. The packet will be an important tool for the classroom teacher to design lessons appropriate for the needs of the students in each class. Therefore, focus in on the children's attempting the work to the best of his/her ability. The assessment will tell where the child is, so we really want it to be the student's work rather than anyone else's.

Directions: Please solve each problem, making sure that you show all of your work. DO NOT USE A CALCULATOR.

1) $5948 + 673$

2) $678 + 954$

3) $4012 - 689$

4) $520 - 298$

5) 608×79

6) 698×605

7) $70 \overline{)4760}$

8) $40 \overline{)8974}$

EXAMPLE:

*When adding or subtracting, line up all your numbers by place value

$$23.4 + 1.05 \quad \rightarrow \quad \begin{array}{r} 23.40 \\ + 1.05 \\ \hline 24.45 \end{array}$$

You can annex or add zeros so that there are an even number of digits. This is especially important for subtraction of decimals.

9) $67.857 + 2.11$

10) $18.5 + 17.36$

11) $53.25 + 13.1 + 31.28$

12) $5.603 + 2.751 + 8.832$

13) $\$14.03 - \7.57

14) $5.708 - 1.439$

15) $47.34 - 13.76$

16) $31.423 - 12.83$

EXAMPLE:

*When multiplying decimals, line up all the number to the right regardless of place value. Multiply as usual. Move the decimal from the end of your answer to the left, the total number of decimal places in your original problem.

$$1.5 \times 0.03 \quad \rightarrow \quad \begin{array}{r} \overset{1}{.} \\ 1.5 \quad 1 \text{ DP} \\ \times 0.03 \quad +2 \text{ DP} \\ \hline 0.045 \quad 3 \text{ DP} \end{array}$$

17) 148.6×2.9

18) 2.408×5.69

19) 25.37×6.02

20) 0.456×1.7

EXAMPLE:

*When dividing decimals, make sure the "outside" number is a whole number. If you need to move the decimal twice to the right, the number "inside" must also move twice to the right. Pop the decimal up into the answer and divide like normal. Add zeros at the end of your number if you have a remainder and keep dividing.

$$23.71 \div 0.5 \quad \rightarrow \quad \begin{array}{r} \overset{47.42}{.} \\ 05. \overline{) 237.10} \\ \underline{-20} \\ 37 \\ \underline{-35} \\ 21 \\ \underline{-20} \\ 10 \\ \underline{-10} \\ 0 \end{array}$$

21) $1.572 \div 6$

22) $9.729 \div 0.47$

23) $0.798 \div 0.03$

24) $3.474 \div 0.45$

EXAMPLE:

*When adding and subtracting fractions, you must have a common denominator – use the LCM to find it!

Least Common Multiple of 6 & 86: 6, 12, 18, 24, 30, ...8: 8, 16, 24, 32, ...

→

Once you find the LCM, change each fraction to it's equivalent.

$$\begin{aligned}6\frac{7}{8} + 5\frac{5}{6} &= 6\frac{7 \times 3}{8 \times 3} + 5\frac{5 \times 4}{6 \times 4} \\ &= 6\frac{21}{24} + 5\frac{20}{24} \\ &= 11\frac{41}{24} \\ &= 11 + 1\frac{17}{24} \\ &= 12\frac{17}{24}\end{aligned}$$

25) $\frac{4}{5} + \frac{3}{5}$

26) $1\frac{5}{12} + 4\frac{7}{12}$

27) $\frac{7}{12} + \frac{2}{3}$

28) $3\frac{4}{5} + 2\frac{2}{3}$

29) $\frac{4}{6} - \frac{3}{6}$

30) $1\frac{7}{10} - \frac{4}{10}$

31) $\frac{7}{12} - \frac{1}{3}$

32) $4\frac{3}{4} - 2\frac{1}{3}$

EXAMPLE:

*When multiplying fractions, multiply straight across then simplify. All mixed numbers must be changed to improper fractions. To simplify fractions, find the GCF and divide both the numerator and denominator.

$$\begin{aligned}2\frac{5}{8} \times \frac{4}{7} &= \frac{8 \times 2 + 5}{8} \times \frac{4}{7} \\ &= \frac{21}{8} \times \frac{4}{7} \\ &= \frac{84}{56} \\ &= \frac{84 \div 28}{56 \div 28} \\ &= \frac{3}{2} \\ &= 1\frac{1}{2}\end{aligned}$$

33) $\frac{4}{7} \times \frac{7}{10}$

34) $\frac{1}{5} \times \frac{5}{7}$

35) $1\frac{2}{3} \times 2\frac{1}{2}$

36) $2\frac{2}{5} \times 4\frac{3}{8}$

EXAMPLE:

*When dividing fractions, simply multiply the first fraction with the reciprocal (flip flop) of the second.

$$\begin{aligned}\frac{1}{4} \div \frac{3}{8} &= \frac{1}{4} \times \frac{8}{3} \\ &= \frac{8}{12} \\ &= \frac{8 \div 4}{12 \div 4} \\ &= \frac{2}{3}\end{aligned}$$

37) $\frac{4}{5} \div \frac{5}{4}$

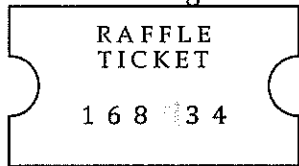
38) $\frac{5}{6} \div \frac{5}{9}$

39) $5\frac{3}{5} \div 4\frac{1}{5}$

40) $6\frac{1}{4} \div 8\frac{1}{3}$

Directions: Please read each problem carefully and answer accordingly. If units are needed, please make sure that you include them in your answer.

41. Mickie has a raffle ticket. One of the digits on the ticket is smudged. What is the place value of the digit that is missing?



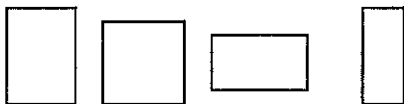
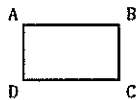
42. Which of the following is a prime number: 27, 39, 45 or 53?

43. The world land speed record is 763.035 miles per hour. What is the number rounded to the nearest hundredth?

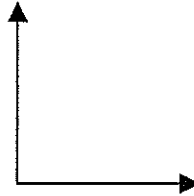
44. Which number best completes the number pattern below?

5, 7, 10, 14, ____, 25, 32

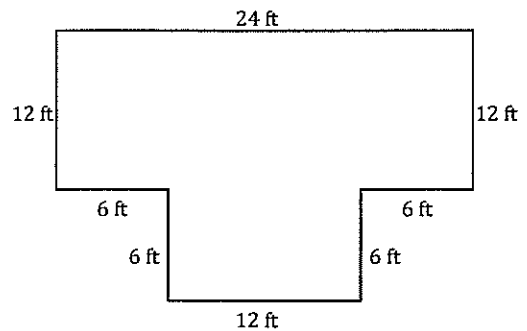
45. Which rectangle is congruent to rectangle ABCD? (Circle the best rectangle.)



46. What is the best estimate of the measure of the angle below?



47. Mr. Taylor built a patio in the shape below. What is perimeter of the patio?

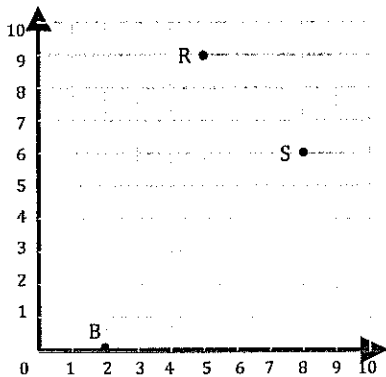


48. The rectangular swimming pool at the recreation center is 25 yards long and 12 yards wide. What is the area of the pool?

49. In a survey of 800 people, 44% of the people surveyed believed that computers will become as smart as people during the 21st century. How many people believed this?

50. Sal played 4 video games. She played Spinner last. She played Speed Racer before she played Ski Bum. She played Frogger after she played Ski Bum. In what order did Sal play the games?

Use the following coordinate plane to answer the following three equations.



51. Give the ordered pairs of the following points:

a. S

b. B

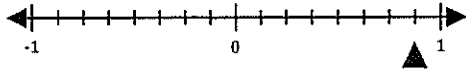
52. Graph the following ordered pairs and label each point.

a. $D(4, 2)$

b. $F(0, 6)$

53. If you move one square to the right and five squares down from point R, what location do you reach? Please give your answer in an ordered pair.

54. On the number line below, the arrow points to what number?

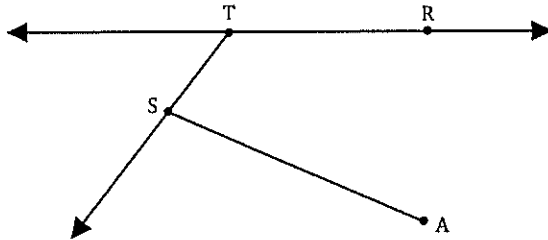


55. In Joel's class of 28 students, 12 students are girls. What fraction of the students are girls? Please simplify your answer.

56. Look at the list below. Which letter has the greatest number value?

- P=0.3
- Q=-0.5
- R=0
- S=-1

Use the figure below to answer the following three questions.



- 57. Which is a line segment?
- 58. Which is an example of a ray?
- 59. Which is an example of a line?

60. Draw an acute angle.

61. A rectangular zoo enclosure is 112 meters long and 48 meters wide. What is the perimeter of the enclosure?

62. Lyddie was picking vegetables. For every 3 carrots she picked, she picked 5 pea pods. If she picked a total of 84 carrots, how many pea pods did she pick?

EXTENDED RESPONSE QUESTIONS

For each of the *TWO* problems, show all your work. *Explain in words* how you got your answer and why you did the steps you did to solve the problem.

63. Troop 236 sold 25 boxes of cookies at a bake sale. Two kinds of cookies were being sold. The peanut butter cookies sold for \$3.00 a box. The mint cookies sold for \$4.00 a box. They forgot to keep track of how many boxes of each kind they sold, but they now have \$88.00. Based on this information, how many boxes of each type of cookie were sold?

64. Karen invited 150 friends to her 15th birthday party, but not everyone can attend. Karen's mother wants one adult for every 25 friends. The cost of food is \$20 for every four friends, and the adults eat for free. If a total of 116 people (including Karen and her mother) go to the party, how many are adults and how many are friends? How much will the food cost?

