Summer Math Packet

Manchester Public Schools

Given to Fifth Graders in June
Going to Sixth Grade

2016

Name_____

School_____

_____

(Parent Signature)

Updated: Spring 2013

This packet includes samples of mathematical tasks grade 5 students studied this school year. According to the Common Core State Standards for Mathematics (CCSSM), students must develop the ability to reason mathematically and learn multiple ways to solve computational and real-world problems. It is also important for students to communicate and show their mathematical thinking through words, diagrams, and/or models. This summer math packet is organized in a way that allows students to show their thinking.

For each problem:

- Read the question carefully.
- Underline important information.
- Solve the problem and **show your work in the space provided**.
    - If extra space is needed, please use another sheet and attach.
- Double-check that you answered all parts of the task.

Doing about one problem per day (not including weekends) will allow you to complete this packet before the school year begins. ☺

Remember to return this packet to your homeroom teacher next school year.

Special thanks to school-based numeracy coaches who collaborated with district trainers to develop this packet in support of our students.

OA: Operations and Algebraic Thinking

1) Circle the mathematical expression that is equivalent to: ***Subtract 15 from 45 and then divide by 3.***

A 15-45 ÷ 3

B (45-15) ÷ 3

C (15-45) ÷ 3

D 3 ÷ (45-15)

Explain how your expression represents the statement.

2) Compare the following expressions using < , > , or =.

(45-15) ÷ 3 ☐ 45 - (15 ÷ 3)

3) What is the value of the equation below if x = 7?

56 ÷ (x + 2) + 12 =

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4) Write the equation that represents **fifteen less than twice a number is 20.**

5) Write the algebraic expression for: **Twice per day I ran (x) miles, then walked 14 more miles.**

6) Solve each of the following expressions.

a) (26 + 18) 4

b) {[2 x (3+5)] – 9} + [5 x (23-18)]

c) 12 – (0.4 x 2)

d) (12 + .65) x (1.75 – 0.5)

e) $6(\frac{1}{2} + 1/3)$

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NBT: Number & Operations Base Ten
MD: Measurement and Data

7) How many times greater is the value of the digit 5 in 583,607 than the value of the digit 5 in 362,501?

8) Based on the table below, explain which worms are larger and smaller than Worm H by using the comparison symbols < and >.

Worm by Letter	**Length** (inches)
F	1.374
G	1.236
H	1.274
J	0.944
K	1.292

9) If you are trying to earn as much money as possible over the summer, would you rather earn $8.10 per hour or $8.099? Explain why your choice makes sense mathematically.

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10) Multiply:

a) 38 x 100 =

b) 55 x 1,000 =

c) 624 x 0.01 =

d) 5,456 x 0.001 =

What's your strategy?

11) If you are paid $8.25 per hour and work for 5 hours per day, 3 days per week for 10 weeks, how much money would you earn?

12) Grandma bought four cookies at 33 cents each and 24 popsicles at $1.73 per dozen. Estimate the total cost.

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13) Multiply:

a) 2.5 x 3

b) 25 x 3

c) .25 x 3

d) 2.5 x 0.3

What strategy did you use?
Do you see a pattern?

14) The high school will divide $2,640 in scholarship money equally amongst 25 students. How much money will each student receive?

15) Lucia has 2.3 meters of rope. If she cuts pieces of rope that are 0.5 meters each, how many pieces can she cut?

16) If you eat 302 ounces of ice cream this summer, how many pounds of ice cream have you eaten? (Hint: there are 16 ounces in a pound).

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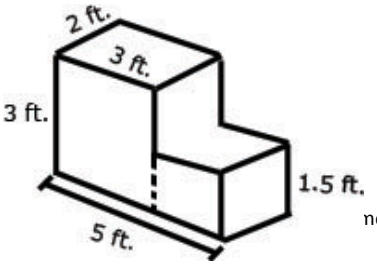
17) Show two different ways to find the product of 325 and 15.

18) Measure 10 objects at home that are less than an inch. Create a line plot to show your data and write two statements supported by your information. (Please use separate paper for your graph and attach; label it with the #18).

19) If you have 24 cubes, how many rectangular prisms with a volume of 24 cubic units can you make? Draw the prisms and record the dimensions.

20) Determine the volume of concrete needed to build the steps in the diagram below.



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NF: Number and Operations – Fraction

21) Mr. Patel needs 8 gallons of ice cream for the 5th grade dance. He bought $3\frac{1}{2}$ gallons vanilla, 2 and 2/3 gallons of chocolate, and 2 $\frac{1}{4}$ gallons of strawberry ice cream. Does he have enough ice cream? Why or why not?

22) Sasha cut 5 identical pieces of licorice into 1/3 piece each. How many pieces of licorice does she have now? Draw a picture to show your answer.

23) In grade 5 you may have worked a lot with equivalent fractions. Explain what equivalent fractions are, provide an example of equivalent fractions, and write why it is important to learn about equivalent fractions.

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24) What must you do to find the sum of 1/3 and 1/5? Is the sum greater or less than 0.75?

25) Kia is making two different types of cookies. One recipe needs $\frac{3}{4}$ cup of sugar and the other needs 2/3 cup of sugar. How much sugar does Kia need to make both recipes?

26) If Nilsa runs 3 1/6 miles every week for 4 weeks, she will reach her goal for the month. So far she has run 1 $\frac{3}{4}$ miles this week. How many more miles does she still need to run this week?

27) Last year you lived $\frac{1}{2}$ mile from school, but next school you will live 2/6 of a mile from school. Will you have a shorter walk next year than you did the past year? Use a number line to show your answer.

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28) Change the following improper fractions into mixed numbers:

a) 22/11

b) 64/5

c) 260/25

d) 50/12

29) A carpenter used exactly 25 feet of wood to make 9 shelves of equal length. Did each shelf measure between 2 and 3 feet or 3 and 4 feet?

30) This summer new tiles are being installed in the school cafeteria. The length of the side of each square tile is $\frac{1}{2}$ foot. The area of the floor is 22 square feet. The width of the floor is 4 feet. Create a model that shows the number of tiles that are being installed.

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31) Every day Isaiah runs 2/5 of a mile. How much has he run after 7 days?

32) On Sunday, your family ate 1/5 of a pan of brownies. On Monday they ate 2/3 of what had been left. How much of the total pan of brownies have they eaten? How much is left? Draw a rectangular model to show your work.

33) Will $2\frac{1}{4} \times 8$ be greater or less than 24? Explain without multiplying to find the exact answer.

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34) Multiply:

a) 2/3 x 8

b) $\frac{1}{4}$ x 9

c) $\frac{3}{4}$ x 6

d) 7/8 x 7

Did you notice any patterns?

35) Compare the following expressions using < , > , or =.

a) 250 x 3/3 ☐ 250 x 5/3

b) 250 x 3/3 ☐ 250 x 1/3

c) 250 x 2/3 ☐ 250 x 2 1/3

How did you determine each answer?

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36) Crate a Venn diagram to classify each of the following products as less than 5/8, equal to 5/8 or greater than 5/8.

a) 5/8 x $\frac{1}{4}$

b) 5/8 x 13/6

c) 5/8 x 1 $\frac{1}{4}$

d) 5/8 x 7/8

e) 5/8 x 6/6

f) 5/8 x 3

What strategy did you use to compare fractions?

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G: Geometry

37) Draw a coordinate graph and plot a 5-pointed star. List the coordinate points <u>you must connect</u> to create your star?

38) Use the graph below to determine how much money Jack makes after working exactly 9 hours. Make sure to explain your mathematical thinking.

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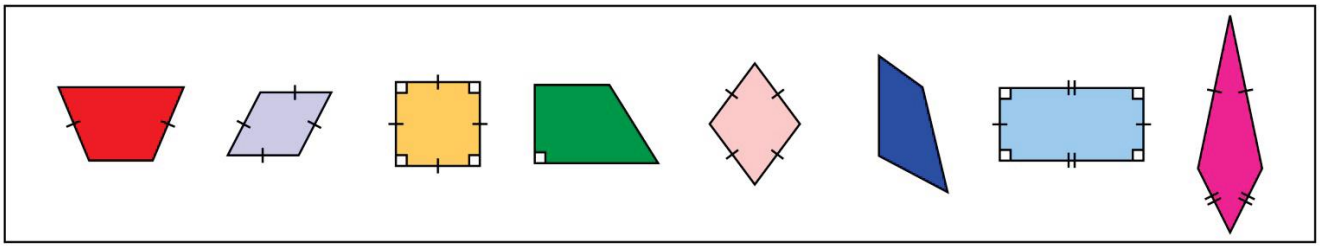
39) Classify each shape in the box below according to its sides and angles. All shapes must be placed in at least one box.

- If a shape isn't a square, rectangle, rhombus, or parallelogram, then place it in the box labeled "Other."

- If a shape meets the properties of more than one category, it must be placed into the boxes of all the types of shapes it can be classified as.

Shapes



Square	Rectangle	Rhombus	Parallelogram	Other

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