Summer Work Packet for MPH Math Classes

Students going into Math 7
Sept. 2021

Name: _____

Hello Students!

This packet is designed to help students stay current with their math skills.

Each math class expects a certain level of number sense, algebra sense, or graph sense to be successful in the course.

These problems need to be completed in the space provided, or a separate sheet of paper, prior to the start of school. Be sure to show all work (no calculator). We will check this assignment in class. Remember, it's about the process, not just the answer.

Please try to pace yourself throughout the summer. Completing 5 problems every week is a nice way to work through the packet. I have included a resource at the end of the packet to help you.

If you have any questions, please feel free to email me at aellerton@mphschool.org or Mrs. Meehan at dmeehan@mphschool.org.

Have a wonderful summer, and we look forward to seeing you in the fall!

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**** You will need a TI-84 calculator for this class.****

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Adding Fractions

1. $2\frac{1}{6}+3\frac{5}{6}=$

2. $6\frac{3}{8}$
$+2\frac{3}{32}$

3. $4\frac{7}{12}$
$+1\frac{5}{8}$

Subtracting Fractions

4. $\frac{17}{21}-\frac{8}{21}=$

5. $6\frac{7}{10}$
$-3\frac{4}{5}$

6. $4\frac{2}{9}$
$-3\frac{1}{6}$

Multiplying fractions

7. $\frac{2}{3} \times \frac{1}{2} =$

8. $18 \times \frac{4}{27} =$

9. $2\frac{2}{27} \times 3\frac{3}{8} =$

10. $\frac{42}{35} \times \frac{10}{21} =$

Dividing fractions

11. $\frac{27}{4} \div \frac{18}{5} =$

12. $18 \div \frac{54}{7} =$

13. $6\frac{3}{4} \div 5\frac{5}{9} =$

14. $6\frac{3}{16} \div 18 =$

Prime Factorization

Use a ***factor tree*** to find the prime factors of each number.

15. 120

16. 75

17. 98

18. 64

Fill in the blank with >, < or = to make a true statement that compares the following decimals.

19. 3.230 _____ 3.23

20. 2.1 _____ 1.25

21. 35.9 _____ 35.896

Round each to the nearest whole number.

22. 6.3 _____

23. 45.7 _____

24. 98.5 _____

Round each number to the nearest tenth.

25. 10.38 _____

26. .418 _____

27. 9.99 _____

Round each number to the nearest hundredth.

28. 0.4508 _____

29. 4.782 _____

30. .7859 _____

Decimals

Add:

31. $1.234 + 62.3 + 32.32$

Subtract.

32. $16.469 - 2.49$

Multiply.

33. 4.57×8.3

34. 234.56×1000

Divide.

35. $71.25 \div 7.5$

36. $6308 \div 7.6$

Find <u>a) the perimeter</u> and <u>b) the area</u> of the shape.

37. A rectangle with width 4 and length of 12.
(Perimeter- add all sides or P = 2l + 2w)
(Area- Side x adjacent side or A = LxW)

Solve each. Show your work. (You may use ratios/proportions, if you would like.)

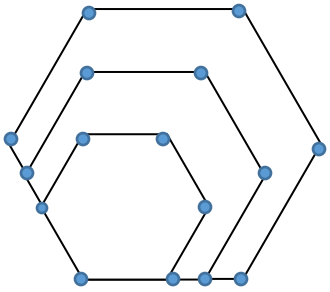
38. One can of pineapple chunks is $2. How many can you purchase for $10?

39. If 4 bunches of basil costs $11, how much will one bunch cost?

40. If Spencer can drive 480 miles on 12 gallons of gasoline, how many miles per gallon does his car get?

These problems are for fun and let me see how you think. Have fun with them and give them a try!

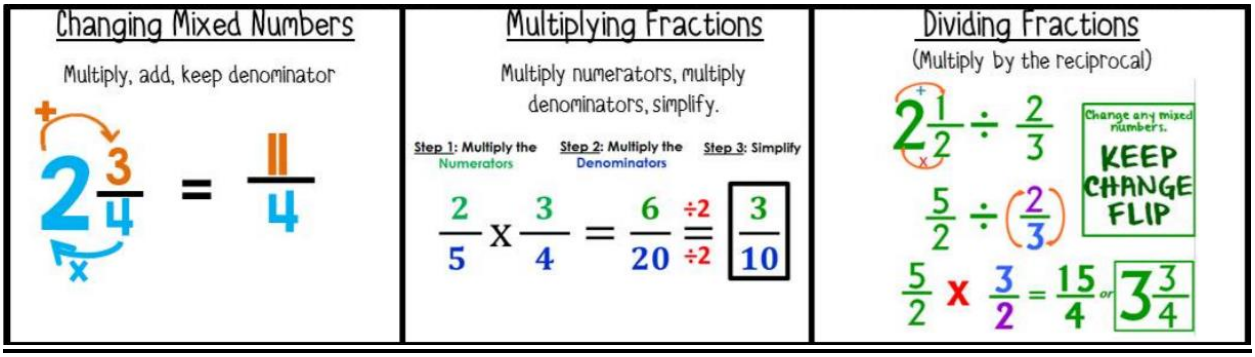
a. Oh brother! I am so bored! Mr. Blather, my science teacher, is lecturing on the weather patterns in the Arctic Circle. YAWN! YAWN! To keep myself awake, I started doodling. I started with one hexagon (6-sided shape), and then kept drawing larger and larger hexagons (see diagram). I must be really bored because I found myself wondering how many vertices (corner points) I would have altogether after the fiftieth (50th) hexagon. What's the answer? Show your work and explain in complete sentences how you thought about the problem.



b. I am thinking of a three-digit number. It is an **odd** multiple of 3, and the **product** of its digits is 24. It is **larger** than 225. What are **all** the numbers of which I could be thinking? Show your work and explain in complete sentences how you thought about the problem.

Reference Sheet

Fractions



Notes: When you are multiplying or dividing fractions, you do not need a common denominator. You do have to change any whole number or mixed number to an improper fraction (shown above). Be sure to state the final fraction in simplest form.

adding fractions

You need a common denominator

$5\frac{1}{4}+2\frac{2}{6}=$ $\quad 5\frac{1\times3}{4\times3}+2\frac{2\times2}{6\times2}=$ $\quad 5\frac{3}{12}+2\frac{4}{12}=$ $\quad 7\frac{7}{12}$

subtracting fractions

You need a common denominator

$5\frac{2}{3}-3\frac{1}{2}=$ $\quad 5\frac{2\times2}{3\times2}-3\frac{1\times3}{2\times3}=$ $\quad 5\frac{4}{6}-3\frac{3}{6}=$ $\quad 2\frac{1}{6}$

Notes: You can add or subtract fractions horizontally (across) or vertically (up and down). The process is the same. You always need a common denominator to add or subtract fractions.

Decimals

decimal place value:

Ten Thousands	Thousands	Hundreds	Tens	Ones	Decimal Point	Tenths	Hundredths	Thousandths	Ten Thousandths
5	8	5	4	9	.	2	4	8	2

Rounding decimals

Round 549.2482 to the nearest tenth

549.2482

any number below 5 keeps the place value the same.

549.2

Comparing decimals

549.2482 _____ 549.2470

Compare the numbers in the same place values from left to right. 8 > 7

549.2482 > 549.2470

Adding & Subtracting Decimals

$$\begin{array}{r} 2.75 \\ +4.30 \\ \hline 7.05 \end{array} \qquad \begin{array}{r} 9.20 \\ -3.45 \\ \hline 5.75 \end{array}$$

LINE UP the decimals!

(Add zeros if necessary)

Multiplying Decimals

$$\begin{array}{r} 2.75 \\ \times \quad 4.3 \\ \hline 825 \\ +1100 \\ \hline 11.825 \end{array}$$

Count the decimal places and place it in the product.

(No need to line up)

Dividing Decimals

$$0.02\overline{)3.80} \qquad 2\overline{)380}^{\,195}$$

Can't have decimal in the 2nd number (or outside "house") move it → in both numbers!

Notes: When we add or subtract, we line up the decimals and go straight down. When we multiply, we multiply as normal, then count the decimal places to find where the decimal should go. When we divide, we move the decimal first, then bring it straight up.

Prime Factorization

A prime factor is a number that has exactly 2 factors, 1 and itself.

Example: Use a factor tree to find the prime factors of 360.

360

36 x 10

4 x 9 x 2 x 5

2 x 2 x 3 x 3 x 2 x 5

$= 2^3 \cdot 3^2 \cdot 5$

Note: Not all trees will look the same, but your final answer will.

360

36 x 10

6 x 6 x 2 x 5

2 x 3 x 2 x 3 x 2 x 5

$= 2^3 \cdot 3^2 \cdot 5$