May 24th, 2023

Dear 6th Grade Accelerated Math parents,

This year has been another wonderful year with your child in Math. I truly feel so blessed to get to work with your child. To maintain the momentum from this year and to avoid the summer slump, your child is being required to complete summer work.

The skills reviewed in the summer work packet are essential for success in 7th grade accelerated math, a Pre-Algebra course. **Students must submit all work.** Work should be neatly written and organized. Students are aware of this expectation. Additionally, to hit the ground running, it is essential that your student feels comfortable with interget operations and fraction operations. We will only review these briefly at the beginning of the year.

In addition, your child took a computation test assessing core skills. Fraction operations, integers and one step equations are some of the essential skills needed for next year. Based on your child's needs, I assigned them review videos and assignments on Khan Academy. **Calculators are not permitted for Khan Academy assignments.** Information for logging into Khan Academy was reviewed with your student and is on the back of this letter.

If your student finds he or she is struggling with any of the concepts they are more than welcome to email me at peloquin@saintantoninus.org. I will not be checking my email daily in the months of June and July but will check it periodically. On the back of this letter, I am also including a list of resources that your student may find helpful if they are struggling or want to further review any concepts. I hope you all have a wonderful and blessed summer!

Sincerely,
Mrs. Meghan Peloquin

Math Resources for Pre-Algebra and Algebra 1

- YouTube Channels
  - iteachalgebra - YouTube - Good for Pre-Algebra and Algebra Concepts
  - mathantics - YouTube
  - Math with Mr. J
  - Mario's Math Tutoring - YouTube
  - MathTV
  - TeacherTube Math - YouTube
  - Mashup Math - YouTube
  - PBS Math Club - YouTube
  - Math Songs by NUMBEROCK - YouTube
  - Middle School Math TikTok Curriculum - YouTube
  - MooMooMath and Science
  -
- Websites
  - Math is Fun
  - Khan Academy
  - Learning IXL
  - Corbett Maths
  - PBS Math Club
  - Mathletics – Your child will still have access to this website over the summer. They used it in Math Class this past year to continue practicing concepts we learned in class. If they have lost their login, please feel free to reach out.
- Books
  - "The Big Fat Middle School Math Workbook" – Additional Practice, Examples and Explanations
  - "Everything You Need to Ace Math in One Big Fat Notebook"
  - "Everything You Need to Ace Pre-Algebra and Algebra 1 in One Big Fat Notebook"

Logging into Khan Academy

- Sign-in with Google, use school email.
- Note **beginning May 30th or 31st –** Mrs. Hartfiel will be resetting computer passwords. The new password for all incoming 7th graders will be Jaguar7&.

Things You Need to Know

Integer Operations

Adding

- When the signs are the same, add the integers and keep the same sign.
- When the signs are different, subtract the integers and keep the sign of the integer with the greatest absolute value.

Subtracting

- Keep the first number the same.
- Change the subtraction sign to addition.
- Change the second number to its opposite.
- Follow the rules for addition.

Multiplying and Dividing

- Multiplying or dividing two integers with the SAME sign = positive product or quotient.
- Multiplying or dividing two integers with DIFFERENT signs = negative product or quotient.

Converting Between Fractions and Decimals

Fractions to Decimals

- Convert rational numbers to decimals using long division
- The numerator becomes the dividend.
- The denominator becomes the divisor.
- Represent a repeating decimal by placing a line over the number(s) that repeat.

Decimals to Fractions

- Convert decimals to fractions using place value.
- Write the decimal as a fraction based upon how you would say it. If the number extends to the tenths place, it will be a fraction with 10 as the denominator. If it extends to the hundredths place, it will be a fraction with 100 as the denominator, and so on.

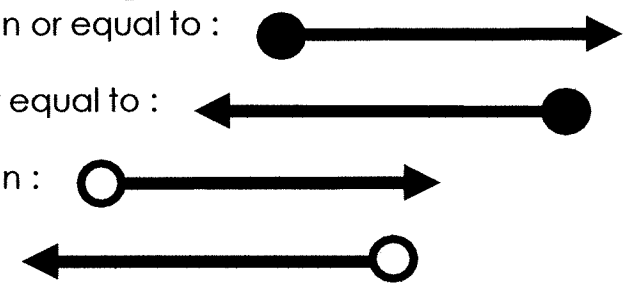
Things You Need to Know

Properties of Math

- **Associative Property**
  - $(a+b)+c=a+(b+c)$
  - $(a \bullet b) \bullet c=a \bullet(b \bullet c)$
- **Commutative Property**
  - $a+b+c=a+b+c$
  - $a \bullet b \bullet c=a \bullet b \bullet c$
- **Distributive Property**
  - $a \bullet(b+c)=a \bullet b+a \bullet c$
- **Identity Property**
  - $a \cdot 1=a$ and $a+0=a$
- **Inverse Property**
  - $a \cdot \frac{1}{a}=1$ and $a+{}^{-}a=0$

Graphing Inequalities

- Greater than or equal to :
- Less than or equal to :
- Greater than :
- Less than :



- **Adjacent Angles:** Angles that share a side.
- **Complementary Angles**: Angles that have a sum of 90°.
- **Supplementary Angles:** Angles that have a sum of 180°.
- **Vertical Angles:** Angles that shar a vertex, but not a side.
- **Parallel Lines:** Two lines in a plane that never cross.
- **Perpendicular Lines:** Two lines in a plane that form a 90° angle at their intersection.

Formulas

- **Area of circles:** $A=\pi r^2$ **Circumference of circles:** $C=2\pi r$ or $C=\pi d$
- **Area of triangles:** $\frac{1}{2}bh$ **Area of trapezoids:** $\frac{1}{2}(b_1+b_2)h$

Order of Operations

Groupings A/S Add/Subtract
Exponents
M/D Multiply/Divide ★ No Calculators

1. Simplify: $6 + 6 - (3 - 5)$	2. Simplify: $1 + 1 - (^{-}5 - 4)$	3. Simplify: $\frac{(31 + 20 - 1)}{15 - 5}$
4. Simplify: $3 \bullet 22 \div 11 - 8$	5. Simplify: $35 \div 5(6 - 1 - 4)$	6. Simplify: $^{-}5(5 - 1) + 2 \bullet 4$
7. Simplify: $^{-}4 + (^{-}1 - 4) \bullet ^{-}6$	8. Simplify: $\{^{-}4 - 4 - (^{-}5)\} \bullet ^{-}3$	9. Simplify: $((2 + 5) \bullet 3) \div (4 - 1)$

FRACTION WORD PROBLEMS

★ No Calculators

Directions: Read each problem carefully and solve. Show your work.

1) $\frac{4}{7}$ of a pizza was eaten. The next day, $\frac{1}{2}$ of what was left was eaten. How much is left of the original pizza?	2) Erin brought $8\frac{1}{2}$ pounds of ham to a party. Ryan brought an additional $2\frac{3}{5}$ pounds. How much ham was brought to the party?
3) Yvette ran $4\frac{7}{8}$ miles. Greg ran $1\frac{7}{10}$ miles. How much further did Yvette run?	4) A recipe calls for $5\frac{1}{3}$ cups of sugar. How much sugar will be needed if the recipe is quadrupled (multiply by 4)?
5) Betty is making $4\frac{1}{2}$ dozen cookies. She needs $1\frac{7}{8}$ cups of chocolate chips for one dozen cookies. How many cups of chocolate chips does Betty need? (Multiply)	6) A fish tank holds $12\frac{3}{5}$ gallons of water. The fish tank is filled $\frac{7}{8}$ of the way. How much water is in the fish tank?
7) Liz drank $\frac{10}{12}$ of a gallon of water yesterday and $1\frac{1}{3}$ gallons today. How much water has Liz consumed over the last two days?	8) There are 40 students in an art club. $\frac{2}{5}$ of the students are females. How many students in the art club are females? (Multiply)

Factor and Expand

1) Factor $8x - 20$

Ex: ① Find GCF
8: 1, 2, ④ 8
20: 1, 2, ④ 5, 10, 20
② "Undo" Distributive Prop
$4(2x-5)$

2) Factor $-12 + 30x$

3) Factor $11x + 16x$

4) Factor $-6xy - 2y$

5) Factor $25x^2 - 10x$

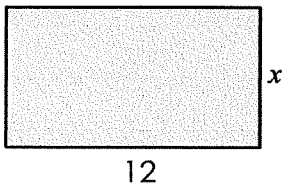
6) Factor $40y - 16y^2$

7) Expand $-4(x - 6)$
$-4x + 24$

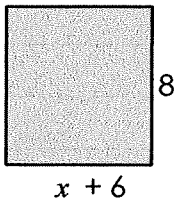
8) Expand $8x - 4(x + 6)$

9) Expand $3x - (4x - 6) + 10x$

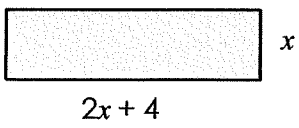
10) Write an expression that represents the area of the figure.



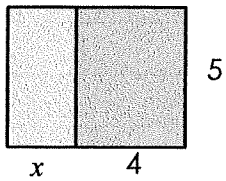
11) Write an expression that represents the area of the figure.



12) Write an expression that represents the perimeter of the figure.



14) Write an expression that represents the perimeter of the figure.



Evaluating Expressions

★ Show all steps
★ Calculators allowed

Directions: Evaluate each expression for the given value(s) of the variable(s).

1) $a-(b-b)$; $a = 5$ and $b = 3$

2) $m+m-n$; $m = 2$ and $n = 2$

$$n-\frac{m}{6}+m$$

3) $6r+p$; $r = 7$ and $p = -2$

$$m-\left(\frac{n}{2}-m\right)$$

4) $\frac{p}{2}-(pq+q)$; $p = -2$, $q = -1$

5) $p-(q+6)-7$; $p = -8$ and $q = -9$

6) $a(a+b-b+a)$; $a = -3$ and $b = -2$

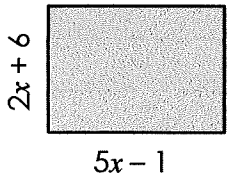
Combine Like Terms

1) $-(4x + 7) - 6x$

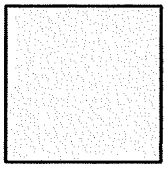
2) $-12(3x - 9) + 15$

3) $(1 + 10x) + (5 - 4x) - x$

4) Find the perimeter of the rectangle. (Answer will be an expression).



5) Find the perimeter of the square.



Solving Equations

★ Show ALL Steps
★ Calculator allowed

1) $-9x = 81$

2) $-90 = 18r$

3) $m - 1 = \frac{1}{2}$

4) $3 + \frac{x}{2} = 7$

5) $\frac{p+3}{18} = 1$

6) $-7 = \frac{r}{2} + 3$

7) $5(-4 - 2n) = -90$

8) $-112 = -8(3r + 5)$

9) $-4(-3x + 4) - 8 = -84$

10) A cookie recipe calls for 10 cups of milk. Magda has already put in 7.3 cups. How many more cups does she need to put in?

11) 300 reduced by twice a number is 146. What is the number?

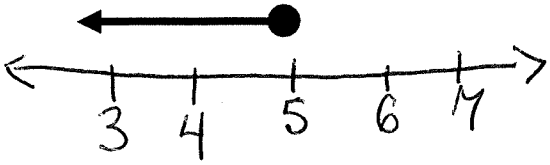
12) Ryan spent half of his weekly allowance on video games. To earn more money, he ran to the grocery store and earned another $8. What was his weekly allowance if he ended the week with a total of $14?

13) Ellie ran $4x + 5$ miles today and $3x - 2$ miles yesterday. If she ran a total of 31 miles, what is the value of x?

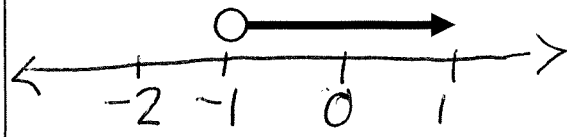
Inequalities

★ Calc allowed
★ 11-13 Solve for Variable

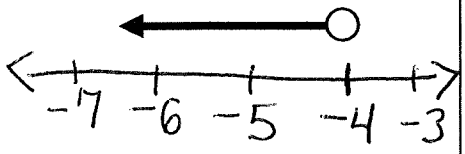
1) Write the inequality represented on the number line.



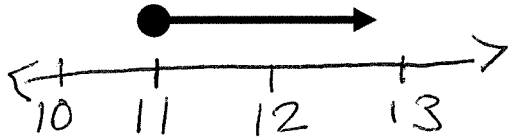
2) Write the inequality represented on the number line.



3) Write the inequality represented on the number line.



4) Write the inequality represented on the number line.



5) Write as an inequality. "A number is no more than six."

6) Write as an inequality. "The product of four and a number is more than ten."

7) Write as an inequality. "The difference of a number squared and three is at least twelve"

8) Is the given number a solution to the inequality?

$3x + 1 < 10$; 3

9) Is the given number a solution to the inequality?

$2x - 5 \geq 7$; 8

10) Is the given number a solution to the inequality?

$-2x - 7 \leq 15$; 7

11) $\frac{4+x}{5} \leq 3$

12) $\frac{v-10}{6} > -1$

13) $-1 + \frac{x}{14} < -2$

Proportions

1) Is the relationship proportional?

$$\frac{9}{15}=\frac{6}{100}$$

2) Is the relationship proportional?

$$\frac{4}{7}=\frac{7}{10}$$

3) Is the relationship proportional?

$$\frac{6}{15}=\frac{8}{20}$$

4) Is the relationship proportional?

x	1	3	5	7
y	12	36	60	84

5) Is the relationship proportional?

x	1	2	3	5
y	75	150	225	375

6) Is the relationship proportional?

x	0	2	4	6
y	4	10	16	22

7) Find the value of e.

$$\frac{e}{5}=\frac{3}{2}$$

8) Find the value of m.

$$\frac{12}{m}=\frac{5}{18}$$

9) Find the value of p.

$$\frac{6}{2}=\frac{4}{p}$$

10) The ratio of cows to horses on a farm is 4:5. If there are 60 horses, how many cows are there?

11) Justine baked 3 dozen cupcakes in 40 minutes. How long would it take her to bake 5 dozen cupcakes?

12) Alejandro drove 140 miles in two hours. At that rate, how far will he have traveled after 6.5 hours?

13) Michael spends $19.50 on 6 gallons of gas. How many gallons does he get if he spends $26.65?

Unit Rates

★Show work
★Calculator allowed

1) Find the unit rate.

hours	3	8	12	15
bagels	540	1,440	2,160	2,700

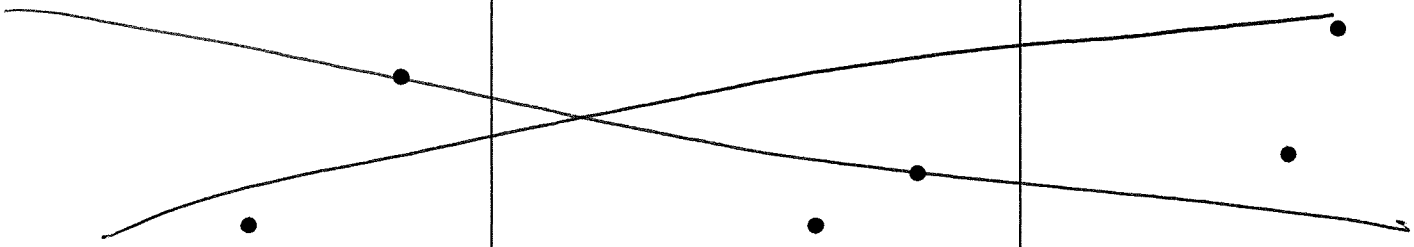
2) Find the unit rate.

mins.	5	8	10	12
miles	0.625	1	1.25	1.5

3) Find the unit rate.
5 cans of corn cost $5.95

4) Find the unit rate.
$3.50 to wash 5 pounds of clothes at a laundromat

5) Find the unit rate.
2.5 inches in 4 seconds



9) Hunter can type 2,400 words in an hour. How many words can he type per minute?

10) Mrs. Daniels paid $22.80 for 8 books for her classroom. What was the cost of one book if they were all the same price?

11) Emma spent 65 minutes completing 26 homework problems. What was the average amount of time spent on each problem?

12) Vance earned $68.25 for 7 hours of work. What is his hourly pay rate?

Percents

1) What is 80% of 90?	2) 60 is 40% of what number?	3) 94.5 is what percent of 210?
4) 10.5 is what percent of 35?	5) What is 5% of 6?	6) 17 is 20% of what number?
7) Enrollment in 7th grade went from 1,200 to 1,180. Find the percent change.	8) The price of a small pizza changed from $7.50 to $9.00. Find the percent change.	9) The temperature changed from 42° to 22°. Find the percent change.

10) The Taylor family had a $74 dinner bill. How much did they pay after including an 18% tip?	11) Amari sold his home for $220,000. He paid 5% commission to his Realtor. How much did Amari pay the Realtor?
12) The cost of a $745 laptop is discounted 20%. Mary has a coupon that takes 10% off the sale price. How much does she pay for the laptop?	13) A store marked up the cost of a $40 pair of shoes by 15%. If someone used a 15% coupon to purchase, how much did they pay for the shoes?