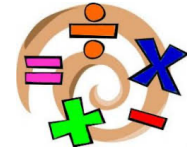


Summer Math Review 2021: 7th Math Entering 8th Pre-Algebra



Dear Students and Parents,

Well, it's certainly been an interesting year! We have made the most of a difficult situation, turned challenges into opportunities, and accomplished so much together.

One of my goals is for each of you to develop a solid foundation for a successful transition to pre-algebra. Strong number sense and confidence working with fractions and integers is a key part of this foundation. Fluency working with the algebraic language and applying properties and steps when solving equations will be a major objective of pre-algebra in 8th grade.

What did we learn this year? This packet gives you a look at the skills we studied. There is a page for each unit – from scale drawings to percents. The objective is to help you remember, review, and practice basic skills and concepts. Because these skills are a review of our year, you will find working on this packet helps you begin 8th grade feeling more confident.

I do not recommend calculators or SIRI (do you think I would?). Please be thorough, legible, and show your thinking. Think about what the best strategy for the problem would be, and if it doesn't work, try again. Check to see if you have really answered the question and if your answers are reasonable. You have sharp number sense; don't forget to use it! Work smarter, not harder! If you kept up with creating folders in Notability, you will find you have lots of notes. While IXL may not be your favorite, I included a partial IXL reference list.

I know we all are going to enjoy a well-deserved break this summer! Even though this work will NOT need to be turned in when you return to school, I encourage you use this packet as an efficient way to fit a bit of review and practice into your summer schedule.

I am so proud of your efforts, mindset, attitude, and resilience during this tough year. By showing up and playing along, you made our classroom a great place for learning. Have a wonderful summer!

Mrs. Matthews

IXL Level I References for 7th Math Skills

Scale and Proportion	IXL Level I, skills J1 – J12; K1 - K8
Fraction Operations	IXL Level I, skills G1 - G18
Integers	IXL Level I, skills C1 – C24
Algebraic Expressions	IXL Level I, skills R1 – R3; R8; R11; R14-R15; R17
Equations	IXL Level I, skills S1 – S9
Percent	IXL Level I, skills L1 – L8

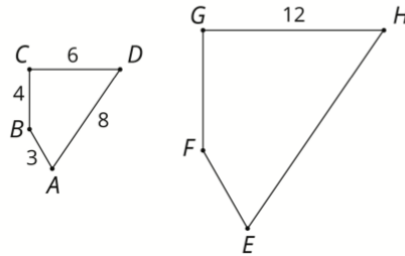
SET 1 SCALE DRAWINGS/PROPORTIONS

7TH Math Entering 8th Pre-Algebra

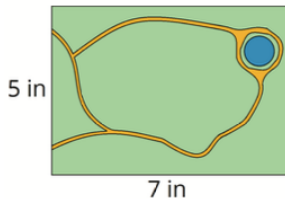
NO Calculators or SIRI. Support answers by showing thinking and justifying reasoning.

Quadrilateral EFGH is a scaled copy of quadrilateral ABCD. Select ALL true statements.

- a.) Segment EF is twice as long as segment AB.
- b.) Segment CD is twice as long as segment FG.
- c.) The length of segment EH is 16 units.
- d.) The measure of angle HEF is twice as large as the measure of angle DAB.



A scale drawing of a rectangular park is 5 inches wide by 7 inches long. The scale is 1 in = 40 ft. Find the width and length of the actual park.



Choose which data table shows a proportion (set of equal ratios.) For the one chosen, write the equation in $y=kx$ form, where k is the constant of proportionality. (The number you multiply x by to get y)

x	y
1	6
2	8
3	10

x	y
1	4
2	8
3	12

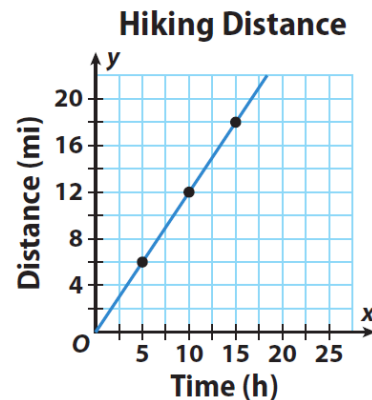
There is a proportional relationship between the distance you hike and the time it takes.

Read the graph carefully. Fill in the table with the three (x, y) ordered pairs shown on the graph. Use your proportion to fill in the bottom row to show the constant of proportionality.

Fill in the blank to tell what the point $(1, k)$ means in this situation:

“For every 1 hour, I hiked _____ miles.”

Time (hours)	Distance (miles)
1	



SET 2 – FRACTIONS

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NO Calculators or SIRI. Support answers by showing thinking and justifying reasoning.

<p>Fill in these blanks about dividing fractions:</p> <p>The division expression $\frac{1}{6} \div \frac{2}{3}$</p> <p>shows how many groups of _____ go into _____</p> <p>has a divisor of _____ ; a dividend of _____</p> <p>has a quotient less than or more than 1. (circle)</p> <p><i>(Think; answer questions; DO NOT calculate)</i></p>	<p>I used $\frac{3}{8}$ of a $5\frac{2}{3}$ pound bag of apples for a pie. Think about groups of - what operation is this? It's NOT subtraction! Make sure to write equation.</p> <p>a.) How many pounds did I use?</p> <p>b.) How many pounds are left?</p>
<p>Find the sum. Think: answer is negative.</p> $-\frac{7}{8} + \left(-\frac{1}{6}\right)$ <p>Find the product. Improperize. Simplify before you multiply.</p> $1\frac{7}{8} \times 4\frac{4}{9}$	<p>I ran $2\frac{1}{2}$ times around a $4\frac{2}{3}$ mile long trail. How many miles did I run? Make sure to write the equation you are solving.</p>
<p>Divide. Reciprocal. Simplify before you multiply.</p> <p>a.) $\frac{8}{15} \div 32$</p> <p>b.) $51 \div \frac{3}{8}$</p>	<p>One serving of chicken noodle soup is $1\frac{2}{3}$ cups. The cafeteria makes 65 cups of soup. How many servings do they have? Make sure to write the equation you are solving.</p>

SET 4 – INTEGERS PART 2

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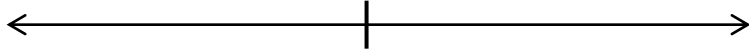
NO Calculators or SIRI. Support answers by showing thinking and justifying reasoning.

Show each of these equations on a number line.

Clearly show the start (S), an arrow to show the direction you move, and the end (E).

Make sure to write the answer on the line in the equation.

$-1 + 4 = \underline{\hspace{2cm}}$



$-1 - 4 = \underline{\hspace{2cm}}$



Simplify following order of operations.
Remember which to do first.

$-20 - 4 + 2 \div 2 \cdot (-3)$

Simplify following order of operations.
Remember the absolute value symbol.

$|-4| - 2^3 \div 2 \cdot 2$

A group of tourists is in a national park. The bus starts at an elevation of 140 feet **below** sea level. It then **ascends** (goes up) 470 feet. What is the new elevation of the bus relative to sea level? A diagram will be helpful.

Find the quotient.
 $6510 \div (-30)$

Find the product.
 $-16 \cdot (-17) \cdot (-10)$

Give an example of a pair of factors with a product of negative 48.


$\underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}} = -48$

What integer, when divided by -6, has the quotient positive 12? (*Careful – answer is not -2*)

SET 5 – ALGEBRAIC EXPRESSIONS

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NO Calculators. Support answers by showing thinking and justifying reasoning. Circle answers.

<p>Write two different equivalent expressions (one with parentheses, one not) to represent this model.</p> 	<p>Write an algebraic expression. Use x for the variable.</p> <p>a.) One-fourth of a number</p> <p>b.) 9 less than half a number</p> <p>c.) Four groups of the sum of a number and 2</p> <p>d.) The sum of four times a number and 2</p>
<p>Which expression says "ten less than product of 4 and x" ?</p> <p>$10 - 4x$ $4x - 10$</p> <p>$10 - 4 + x$ $\frac{x}{4} - 10$</p> <p>Which expression says "three groups of the sum of a number x and 7" ?</p> <p>$3(x + 7)$ $3 + (7x)$</p> <p>$3x + 7$ $x + 3 + 7$</p>	<p>Write the expression using coefficients. Remember, coefficients tell how many of the variable there are.</p> <p>$x + x + x + y + y + y$</p> <p>Circle the expression that contains both three terms and two different variables. (A unique letter is a unique variable.)</p> <p>$x + 7 + 2$ $7xy$</p> <p>$7 + x + y$ $7x - 15x - 7$</p>
<p>Distribute to write an equivalent <i>expression</i>. Careful with negatives and decimals!</p> <p>a.) $5(3x + 12)$</p> <p>b.) $-7(8 + 2x)$</p> <p>c.) $0.5(x - 6)$</p> <p>d.) $-12(x - 7)$</p>	<p>Simplify the expressions. How? Distribute if needed; then identify and combine like terms.</p> <p>a.) $3x - 2 - 8x + 7$</p> <p>b.) $5(3x - 7) + 2(8x + 10)$</p>

SET 6 – EQUATIONS PART 1**7TH Math Entering 8th Pre-Algebra**

NO Calculators or SIRI. Support answers by showing thinking and justifying reasoning.

<p>Solve this equation with proper steps.</p> $-8 + 2x = -56$	<p>Solve this equation with proper steps.</p> $\frac{x}{2} + 12 = 28$
<p>Solve this equation with proper steps.</p> $0.1x - 0.3 = 6.7$	<p>Solve this equation with proper steps.</p> $-3x - 3 = 48$
<p>Read carefully. Translate into an equation. Then solve with proper steps.</p> <p><i>"Ten less than twice a number is negative 25"</i></p>	<p>Read carefully. Translate into an equation. Then solve with proper steps.</p> <p><i>"The sum of twice a number and five is fifteen."</i></p>

SET 7 – EQUATIONS PART 2**7TH Math Entering 8th Pre-Algebra**

NO Calculators or SIRI. Support answers by showing thinking and justifying reasoning.

Multi-Step: Solve with factoring.

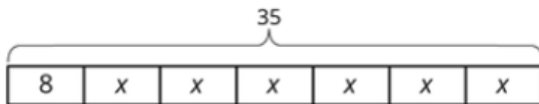
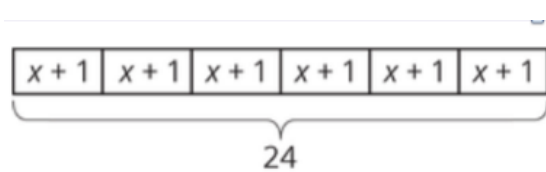
$$6(6x - 2) = 24$$

Multi-Step: Solve with distributive property.

$$-6(2x + 3) = 18$$

Multi-Step: Distribute first, then CLT, then solve with proper steps.

$$3(4x - 2) - 7x + 2 = 16$$

Find the value of x shown in the diagram. You must support your answer – either use the diagram or write and solve an equation.Find the value of x shown in the diagram. You must support your answer – either use the diagram or write and solve an equation.

Ralphie is saving for a computer that costs \$850. His parents will pay \$200. He gets a job earning \$25 per week. How many weeks will it take him to save the money to buy the computer?

First, write an equation to describe the situation. Then solve with proper steps.

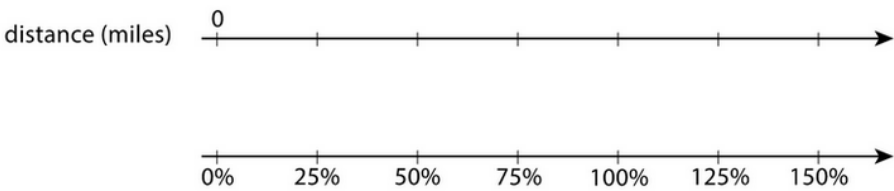
Think about what the constant term is and what the coefficient is in your equation.

My variable is _____. It stands for _____

SET 8 – PERCENTS

7TH Math Entering 8th Pre-Algebra

NO Calculators or SIRI. Support answers by showing thinking and justifying reasoning.

<p>Of the total 240 students, 45% are girls and the rest are boys. How many students are boys? (think: finding the part)</p> <p>55% of the amount in Ralphie's savings is \$550. How much does he have in his savings? (think: finding the whole)</p> <p>Your quiz has 32 questions. You answer 24 correctly. What percent do you answer correctly?</p>	<p>Write the percent as a decimal. 180% 5% 132.5%</p> <p>Write the decimal as a percent. 0.08 0.565 2.75</p> <p>Write the ratio as a percent. These are “friendly” $\frac{9}{20}$ $\frac{11}{25}$ $\frac{12}{60}$</p>
<p>PART = %(WHOLE) Write and solve a % equation to find the part.</p> <p>a.) What is 75% of 124?</p> <p>b.) What is 70% of 20?</p> <p>c.) What is 120% of 84?</p>	<p>PART = %(WHOLE) Write and solve a % equation to find the whole.</p> <p>a.) 21 is 25% of what number?</p> <p>b.) 25 is 125% of what number?</p> <p>c.) 12 is 20% of what number?</p>
<p>I biked 16 miles on Saturday. SHOW the answers to the questions on the number line.</p> <p>a.) What is 100% of my Saturday distance?</p> <p>b.) On Friday, I biked 75% of my Saturday distance. How far is that?</p> <p>c.) On Sunday, I biked 150% of my Saturday distance. How far is that?</p> <div style="text-align: center;">  <p>The image shows two horizontal number lines. The top line is labeled 'distance (miles)' and has a starting point at 0 with an arrow pointing to the right. There are six tick marks along the line, but they are not labeled with numbers. The bottom line is labeled with percentages: 0%, 25%, 50%, 75%, 100%, 125%, and 150%. It also has an arrow pointing to the right.</p> </div>	