

8th grade Summer Reading

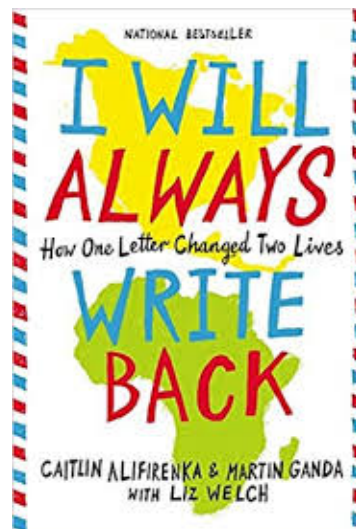
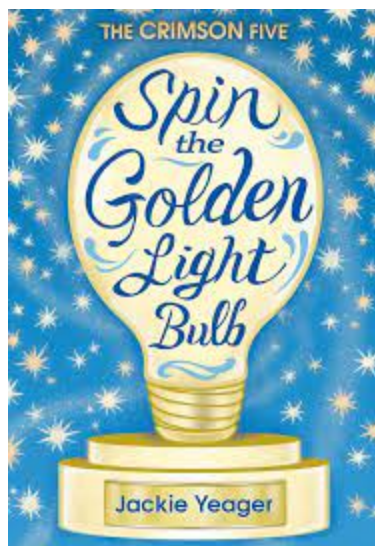
Incoming 8th graders are required to read two summer reading books. There is an assignment that goes along with each book. Each assignment must be completed and with you on the first day of school.

1. 2023 Summer Reading Adventure at SKS (assignment attached)

- *Spin the Golden Light Bulb* by Jackie Yeager

2. Nonfiction Requirement (assignment attached)

- *I Will Always Write Back* by Caitlin Alifirenka and Martin Ganda with Liz Welch

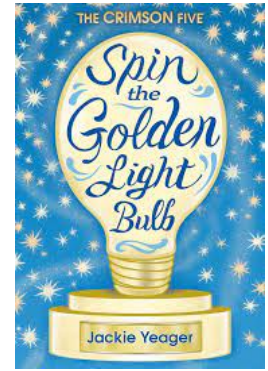


Name _____

2023 Summer Reading Adventure at SKS

Required Reading:

Spin the Golden Light Bulb by Jackie Yeager



Assignment: Entering 8th Grade

1. Read *Spin the Golden Light Bulb* by Jackie Yeager.
2. Take notes as you read to aid your comprehension. Be prepared to take a book test at the start of the school year.
3. After reading, write 5 discussion questions you will share with your class during our September Book Club Meeting.
4. Use the attached sheet to write all questions.
5. Remember, your job is to create a list of questions to help discuss the book you are reading. Try to create questions that will make your group think. As you read, the best discussion questions usually come from your thoughts, feelings, and concerns.
6. Use the "Start a Discussion" question stems if you need help getting started.

Start a Discussion!

Why..

How would you explain...

What is the importance of...

What is the difference between/among...

What is the similarity between/among...

What connection is there

between/among...

Describe the...

How does...

How did you feel when...

Name _____ Book Title _____

Summer Reading Adventure
Discussion Questions

Question #1

Question #2

Question #3

Question #4

Question #5

Assignment #2: Non-fiction requirement: *I Will Always Write Back*

As you read, choose 5 significant events that occur in the story. In the first column, **briefly** explain (6-10 sentences max.) the event and be sure to include the page number. In the second column, **briefly** analyze (6-10 sentences max.) these particular events and explain why they are significant: how do they propel the story forward, how do they affect the characters, are they turning points in the story, do they change the characters in some way, are they foreshadowing another event, etc.
You can use additional pages if more room is needed

Significant event and page #

Analysis

1.	
2.	

3.

4.

5.

8th Grade Supply List

1 heavy duty binder (for folders and papers) OR any organizer of choice

2 two-pocket folders

1 copybook for Social Studies (student choice of type)

1 copybook for Science (student choice of type)

1 marble copybook for math

1 copybook for ELA (student choice of type)

Loose leaf or theme notebook

#2 Pencils

Blue/Black/Red pens

Highlighters

Index cards

TI-34 Calculator/Protractor

Art supplies as desired (crayons, colored pencils, scissors, glue, etc)

For your homeroom, please contribute:

2 boxes of tissues

2 containers of disinfecting wipes

1 paper towel roll

Name: _____

Incoming 8th Grade Summer Math, 2023

*Please be sure to show all of your work in this packet but also make sure to fill in the answer sheet. This packet will be due the first week of school and will be graded. Each topic begins with some examples and directions on how to solve those particular problems.

**Digital Component: IXL Skills to be completed by July 31, 2023

Rising 8th grade students (use the grade 7 skills tab)

B24, E4, F4, G4 and G16, M1, N2, O2, P1, U2, Y1 and Y 2

Upon completion of all skills, please send the following email to summermath@sksschool.org and include in the Subject Line:

"8th Grade _____ (First & Last Name)"

In the body, please include the following:

This message attests that my child has completed the Summer Math IXL assignments to 80%.

Parent Name: _____

Unit: Knowledge of Algebra, Patterns and Functions

Objective: Write an algebraic expression to represent unknown quantities with one unknown and 1 or 2 operations.

Examples:

The tables below show phrases written as mathematical expressions.

Phrases	Expression
9 more than a number The sum of a 9 and a number A number plus 9 A number increased by 9 The total of x and 9	$X + 9$
6 multiplied by g 6 times a number The product of g and 6	$6g$
4 subtracted from a number A number minus 4 4 less than a number A number decreased by 4 The difference of h and 4	$H - 4$
A number divided by 5 The quotient of t and 5 Divide a number by 5	$T \div 5$

*Write each phrase as an algebraic expression.

- 1) eight less than m
- 2) Let t = the number of tomatoes Tye planted last year. This year she planted 4 times as many. Write an algebraic expression to show how many tomatoes Tye planted this year.
- 3) Last week Jason sold x number of hot dogs at the football game. This week he sold twice as many as last week, and then he sold 15 more. Write an expression to show how many hot dogs Jason sold this week.

Unit: Knowledge of Algebra, Patterns and Functions

Objective: Evaluate an algebraic expression using one unknown and no more than 2 operations.

Examples:

#1 Evaluate $6x - 7$ if $x = 8$ $6x - 7 = 6(8) - 7$ replace x with 8 $= 48 - 7$ use order of operations $= 41$ subtract 7 from 48	#2 Evaluate $5m - 15$ if $m = 6$ $5m - 15 = 5(6) - 15$ replace m with 6 $= 30 - 15$ use order of operations $= 15$ subtract 15 from 30
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4) Evaluate $6 + 3b$ when $b = 4$

5) Evaluate $5(6) - c$ if $c = (-2)$

6) Evaluate $6a^2$ if $a = 3$

Unit: Knowledge of Algebra, Patterns and Functions

Objective: Evaluate numeric expressions using order of operations with no more than 4 operations.

Examples:

<p>#1 Evaluate $14 + 3(7 - 2) - 2 \cdot 5$</p> <p>$14 + 3(7 - 2) - 2 \cdot 5$ $= 14 + 3(5) - 2 \cdot 5$ parentheses first $= 14 + 15 - 2 \cdot 5$ multiply left to right $= 14 + 15 - 10$ multiply left to right $= 29 - 10$ add left to right $= 19$ subtract</p>	<p>#2 Evaluate $8 + (1 + 5)^2 \div 4$</p> <p>$8 + (1 + 5)^2 \div 4$ $= 8 + (6)^2 \div 4$ parentheses first $= 8 + 36 \div 4$ exponents $= 8 + 9$ divide $= 17$ add</p>
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7) $(2 + 10)^2 \div 4$

8) $72 \div 3 - 5(2.8) + 9$

9) $3 + 14(10 - 8) - 4^2$

Unit: Knowledge of Algebra, Patterns and Functions

Objective: Determine the unknown in a linear equation with 1 or 2 operations.

Examples:

<p>#1 Solve $x + 5 = 11$</p> <p>$x + 5 = 11$ write the equation -5 -5 subtract 5 from both sides $x = 6$ simplify</p>	<p>#2 Solve $3x + 2 = 23$</p> <p>$3x + 2 = 23$ write the equation -2 -2 subtract 2 from both sides $\frac{3x}{3} = \frac{21}{3}$ simplify $x = 7$ divide each side by 3 simplify</p>
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10) Solve $2t + (-7) = -1$

11) It costs \$12 to attend a golf clinic with a local pro. Buckets of balls for practice during the clinic cost \$3 each. How many buckets can you buy at the clinic if you have \$30 to spend?

12) An online retailer charges \$6.99 plus .55 per pound to ship electronics purchases. How many pounds is a DVD player for which the shipping charge is \$11.94?

Unit: Knowledge of Number Relationships and Computation

Objective: Read, write and represent whole numbers using exponential notation.

Examples:

<p>Write 6^3 as a product of the same factor. -base = 6, so the exponent 3 means that 6 is used as a factor 3 times.</p> <p>$6^3 = 6 \cdot 6 \cdot 6$</p>	<p>Evaluate 5^4 -evaluate means to solve</p> <p>$5^4 = 5 \cdot 5 \cdot 5 \cdot 5 = 625$</p>	<p>Write $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$ in exponential form. -base = 4, it is used as a factor 5 times so the exponent is 5.</p> <p>$4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 = 4^5$</p>
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13) Evaluate 7^5 .

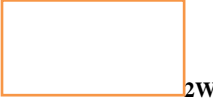
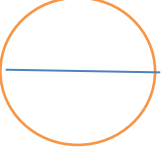
14) Evaluate 5^6 .

15) Write $9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9$ in exponential form.

Unit: Knowledge of Algebra, Patterns and Functions

Objective: Apply given formulas to a problem-solving situation using formulas having no more than three variables.

Examples:

<p>Find the perimeter of the rectangle given the formula $P = 2L + 2W$</p>  <p style="text-align: right;">8 cm $P = 2L +$</p> <p style="text-align: right;">$= 2(10) + 2(8)$ $= 20 + 16$ $= 36 \text{ cm}$</p>	<p>Find the area of the circle with a diameter of 2 feet, given the formula $A = \pi r^2$</p>  <p style="text-align: right;">$A = \pi r^2$ $= 3.14 (2^2)$ $= 3.14 (4)$ $= 12.56 \text{ ft}^2$</p>
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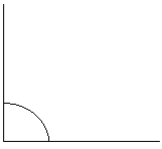
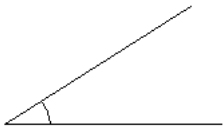


16) Margot planted a rectangular garden that was 18 feet long and 10 feet wide. How many feet of fencing will she need to go all the way around the garden? ($P = 2L + 2W$)

17) Juan ran all the way around a circular track one time. The diameter (d) of the track is 40 meters. What is the circumference of the circle? ($C = \pi d$)

Unit: Knowledge of Geometry

Objective: Identify and describe angles formed by intersecting lines, rays or line segments.

Examples:

<p>Right Angle</p>  <p>Exactly 90°</p>	<p>Acute Angle</p>  <p>Less than 90°</p>	<p>Obtuse Angle</p>  <p>Between 90° and 180°</p>	<p>Straight Angle</p>  <p>Exactly 180°</p>
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18) What type of angle is formed by a clock when it is 1:00pm?

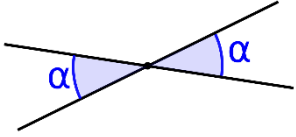
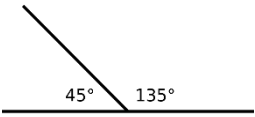
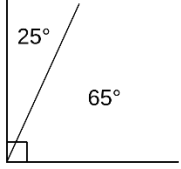
19) What type of angle is formed by a clock when it is 3:00pm?

20) What type of angle is formed by a clock when it is 7:00pm?

Unit: Knowledge of Geometry

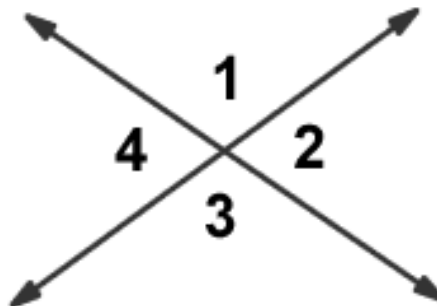
Objective: Identify and describe angles formed by intersecting lines, rays or line segments.

Examples:

Vertical Angles	Supplementary Angles	Complementary Angles
 <p>When two lines intersect, they form two pairs of opposite angles called vertical angles, which are always congruent.</p> <p>Congruent angles have the same measure.</p>	 <p>Two angles are supplementary if the sum of their measures is 180°</p> $45^{\circ} + 135^{\circ} = 180^{\circ}$	 <p>Two angles are complementary if the sum of their measure is 90°</p> $25^{\circ} + 65^{\circ} = 90^{\circ}$

Use the diagram below

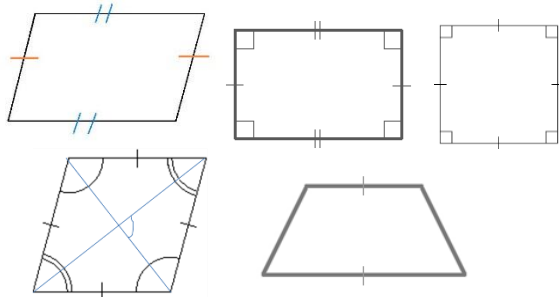
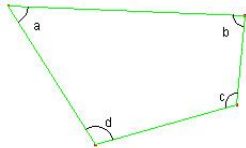
- 21) Classify the relationship between angles 1 and 3 as complementary, supplementary or vertical.
- 22) Classify the relationship between angles 1 and 4 as complementary, supplementary or vertical.
- 23) If the measure of $\angle 2 = 78$, what is the measure of $\angle 3$?



Unit: Knowledge of Geometry

Objective: Determine a missing angle using the sum of their interior angles in a quadrilateral.

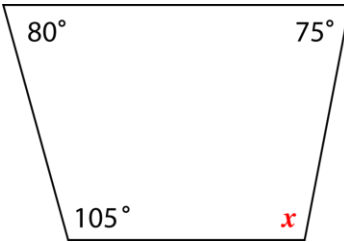
Examples:

<p>Examples of Quadrilaterals:</p> 	<p>The sum of the measures of the angles of a quadrilateral is 360°</p> $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 = 360^\circ$ <p>*Find the missing measure in the quadrilateral.</p>  <p>a = b = c = d =</p> <p>??</p> $115 + 130 + 35 + x = 360 \quad \text{sum of the measures is } 360^\circ$ $320 + x = 360 \quad \text{simplify}$ $\begin{array}{r} 320 + x = 360 \\ -320 \quad -320 \\ \hline x = 40 \end{array} \quad \text{subtract 320 from each side}$
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24) The top of Mrs. Hartsock's coffee table is a quadrilateral whose angles measure 60° , 120° and 100° . What is the measure of the fourth angle?

25) Maria needs to cut a piece of carpet to fit the space near her front door. The space is an odd shaped trapezoid with angles that measure 64° with two other angles that are each right angles. What is the measure of the fourth angle?

26)

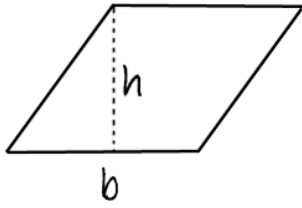


Find the missing measure of the interior angle.

Unit: Knowledge of Geometry
Objective: Determine the area of quadrilaterals using parallelograms or trapezoids.

Examples:

The area A of a parallelogram equals the product of its base b and its height h .



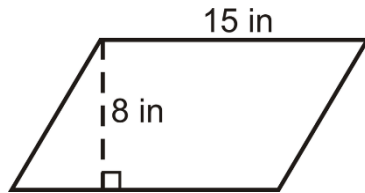
Ex. Find the area of the parallelogram if the base is 6 inches and the height is 3.7 inches.

$$\begin{aligned} A &= bh \\ A &= 6 \cdot 3.7 \\ A &= 22.2 \end{aligned}$$

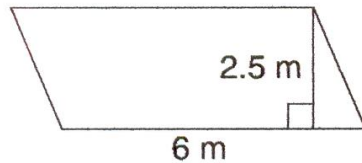
Area of a parallelogram
replace b with 6 and h with 3.7
multiply

****Find the area of each parallelogram. Round to the nearest tenth if necessary.**

27)



28)



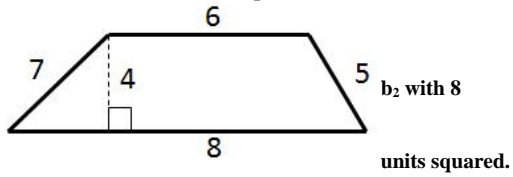
Unit: Knowledge of Measurement

Objective: Determine the area of quadrilaterals using parallelograms or trapezoids.

Examples:

A trapezoid has two bases, b_1 and b_2 . The height of the trapezoid is the distance between the two bases. The area A of a trapezoid equals half the product of the height h and the sum of the bases b_1 and b_2 .

Ex. Find the area of the trapezoid.



$$A = \frac{1}{2} h (b_1 + b_2)$$

$$A = \frac{1}{2} (4) (6 + 8)$$

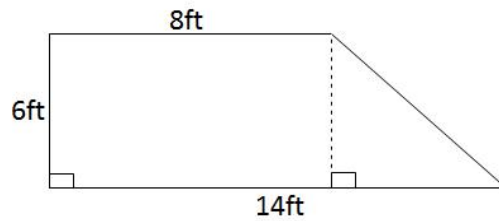
$$A = 28$$

Area of a trapezoid
replace h with 4, b_1 with 6 and

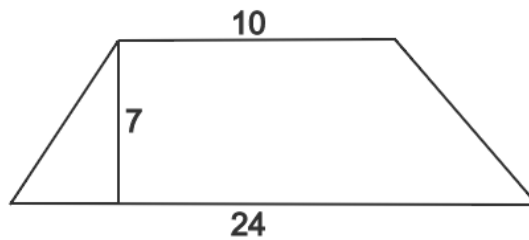
The area of the trapezoid is 28

*Find the area of each trapezoid. Round to the nearest tenth is necessary.

29)



30)



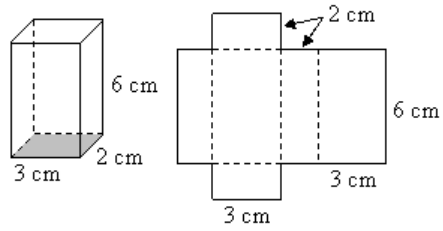
Unit: Knowledge of Measurement

Objective: Determine the surface area of geometric solids using rectangular prisms.

Examples:

The sum of the areas of all the surfaces, or faces, of a three dimensional figure is the surface area. The surface area S of a rectangular prism with length l , width w , and height h is found using the following formula.

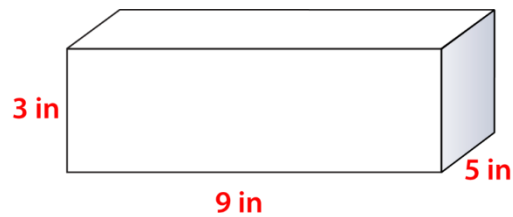
$$S = 2lw + 2lh + 2wh$$



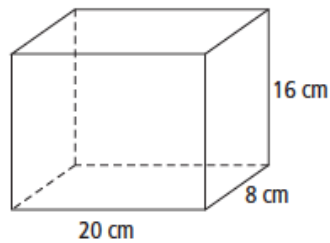
$$\begin{aligned} S &= 2lw + 2lh + 2wh \\ S &= 2(2 \cdot 3) + 2(2 \cdot 6) + 2(3 \cdot 6) \\ S &= 2(6) + 2(12) + 2(18) \\ S &= 12 + 24 + 36 \\ S &= 72 \text{ cm}^2 \end{aligned}$$

*Find the surface area of the rectangular prisms below. Round to the nearest tenth if necessary.

31)




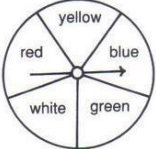
32)



Unit: Knowledge of Probability

Objective: Determine the probability of an event consisting of 2 independent events.

Examples:

<p>*Independent Events: the outcome of one event does not affect the outcome of the 2nd event.</p> <p>*The probability of two independent events can be found by multiplying the probability of the first event by the probability of the second event.</p> <p>*P (A and B) = P(A) • P(B)</p>	<p>A number cube is rolled, and the spinner is spun. Determine the probability of rolling a 2 and spinning red.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>P(red) $1/5 = 1/30$</p> </div> <div style="text-align: center;">  </div> </div> <div style="text-align: right; margin-top: 10px;"> <p>P (2 and red) = P(2) x 1/6 x</p> </div>
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- 33) A coin is tossed and a number cube is rolled. What is the probability of tossing heads and rolling a 3 or a 5?
- 34) One letter is randomly selected from the word PRIME and one letter is randomly selected from the word MATH. What is the probability that both letters selected are vowels?
- 35) What is the probability of spinning a number greater than 5 on a spinner numbered 1 to 8 and tossing a tail on a coin?

Unit: Knowledge of Number Relationships and Computation

Objective: Determine equivalent forms of rational numbers expressed as fractions, decimals, percentages and ratios.

Example:

<p>Write 19/20 as a percent. -divide the numerator by the denominator $19 \div 20 = 0.95$ -move the decimal two places to the right $0.95 = 95\%$</p>	<p>Write 92% as a fraction in simplest form. $\frac{92}{100} \div 4 = \frac{23}{25}$ $100 \div 4 = 25$</p>
<p>Write 92% as a decimal -move decimal two places to the left, add zeros if needed $92.0\% = 0.92$</p>	<p>Write 0.4 as a percent -move decimal two places to the right, add zeros if needed $0.4 = 40\%$</p>

- 36) Write 7/20 as a decimal and percent.
- 37) Write 27% as a decimal and fraction in simplest form.
- 38) Ms. Crest surveyed her class and found that 15 out of 30 students brushed their teeth more than twice a day. Write the ratio as a fraction in simplest form, then write it as a percent and a decimal.

Unit: Knowledge of Number Relationships and Computation

Objective: Compare, order and describe rational numbers.

Example:

<p>Rational numbers include fractions, decimals and percentages. To compare or order rational numbers, they must be in the same form (all fraction or all decimal or all %s)</p>	<p>*Order 0.6, 48% and $\frac{1}{2}$ from least to greatest. Step 1 – change all to decimals (0.6 48% = 0.48 $\frac{1}{2}$ = 0.5) Step 2 – compare decimals and order (0.48, 0.5, 0.6) Step 3 – Write using original form. (48%, $\frac{1}{2}$, 0.6)</p>
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- 39) Order from least to greatest. 22%, 0.3, $\frac{1}{5}$
- 40) Order from least to greatest. 0.74, $\frac{3}{4}$, 70%
- 41) According to the Pet Food Manufacturers Association, 11 out of 25 people own large dogs and 16 out of 50 own medium dogs. Do more people own large or medium dogs?

Unit: Knowledge of Number Relationships and Computation

Objective: Add, subtract, multiply and divide integers.

Example:

<p>Addition Integer Rules: Same Sign: -the sum of two positive integers is positive -the sum of two negative integers is negative For integers with different signs, subtract their absolute value. The sum is: -positive if the positive integer has the greater absolute value -negative if the negative integer has the greater absolute value</p>	<p>Subtraction Integer Rules: -keep the first number the same -switch the operation to addition -change the second number to its opposite (opposite of -6 = 6) -follow addition rules</p>
<p>-6 + (-3) = add, keep the sign = -9 -34 + (-21) = add, keep the sign = -55 8 + (-7) = subtract, keep the higher sign = 1 -5 + 4 = subtract, keep the higher sign = -1</p>	<p>6 - 9 = 6 + (-9) = -3 -3 - 7 = -3 + (7) = -10 -10 - (-12) = -10 + 12 = 2 1 - (-2) = 1 + 2 = 3</p>

- 42) Evaluate $a - b$ if $a = -2$ and $b = -7$
- 43) Evaluate $x + y + z$ if $x = 3$, $y = -5$ and $z = -2$
- 44) Write an addition expression to describe the skateboarding situation. Then determine the sum.
Hank starts at the bottom of a half pipe 6 feet below street level. He rises 14 feet at the top of his kick turn.

Unit: Knowledge of Number Relationships and Computation

Objective: Add, subtract, multiply and divide integers.

Example:

Multiplying and Dividing Integer Rules -two integers with different signs, the answer is negative -two integers with same signs, the answer is positive	$5(-2) = 5$ times -2 , the signs are different so the answer will be negative = -10 $(-6) \times (-9) =$ the signs are the same so the answer will be positive = 54
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- 45) Evaluate $-3ac$ if $a = -3$ and $c = 5$
- 46) A computer stock decreased 2 points each hour for 6 hours. Determine the total change in the stock value over the 6 hours.
- 47) A submarine descends at a rate of 60 feet each minute. How long will it take it to descend to a depth of 660 feet below the surface?

Unit: Knowledge of Number Relationships and Computation

Objective: Add, subtract and multiply positive fractions and mixed numbers.

Example:

To add unlike fractions, fractions with different denominators, rename the fractions so there is a common denominator.	$\frac{1}{6} + \frac{2}{5} = \frac{5}{30} + \frac{12}{30} = \frac{17}{30}$
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- 48) A quiche recipe calls for $2\frac{3}{4}$ cups of grated cheese. A recipe for quesadillas requires $1\frac{1}{2}$ cups of grated cheese. What is the total amount of grated cheese needed for both recipes?
- 49) You want to make a scarf and matching hat. The pattern calls for $1\frac{7}{8}$ yards of fabric for the scarf and $2\frac{1}{2}$ yards of fabric for the hat. How much fabric do you need in all?

Unit: Knowledge of Number Relationships and Computation

Objective: Add, subtract and multiply positive fractions and mixed numbers.

Example:

To subtract unlike fractions, fractions with different denominators, rename the fractions so there is a common denominator.	$\frac{7}{8} - \frac{1}{2} = \frac{7}{8} - \frac{4}{8} = \frac{3}{8}$
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50) $\frac{2}{3} - \frac{1}{6} =$

51) $5\frac{3}{8} - 4\frac{11}{12} =$

Unit: Knowledge of Number Relationships and Computation

Objective: Add, subtract and multiply positive fractions and mixed numbers.

Example:

<p>*To multiply fractions, multiply the numerators and denominators.</p> <p>*Be sure to change mixed numbers to improper fractions before multiplying.</p>	$1\frac{1}{3} \times 3\frac{2}{5} = \frac{4}{3} \times \frac{17}{5} = \frac{68}{15} = 4\frac{8}{15}$
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- 52) Anna wants to make 4 sets of curtains. Each set requires $5\frac{1}{2}$ yards of fabric. How much fabric does she need?
- 53) One sixth of the students at a local college are seniors. The number of freshman students is $2\frac{1}{2}$ times that amount. What fraction of the students are freshman?

Unit: Knowledge of Number Relationships and Computation
Objective: Determine equivalent ratios.

Example:

<p>*Any ratio can be written as a fraction. To write a ratio comparing measurements, such as units of length or units of time, both quantities must have the same unit of measure.</p> <p>*Two ratios that have the same value are equivalent ratios.</p>	<p>*A proportion is an equation stating that 2 ratios are equivalent. Since rates are types of ratios, they can also form proportions.</p> <p>*In a proportion, a cross product is the product of the numerator of one ratio and the denominator of the other ratio.</p>
<p>Write 40 centimeters to 2 meters as a fraction in simplest form.</p> $\frac{40 \text{ cm}}{2\text{m}} = \frac{40 \text{ cm}}{200 \text{ cm}} = \frac{\cancel{40}}{\cancel{200} \div 40} = \frac{1 \text{ cm}}{5 \text{ cm}} = \frac{1}{5}$	<p>Determine whether $\frac{2}{3}$ and $\frac{10}{15}$ form a proportion (are equivalent ratios)</p> $\frac{2}{3} \stackrel{?}{=} \frac{10}{15} \quad 2 \times 15 = 3 \times 10$ $30 = 30$ <p>The cross products are equal, so the ratios are equivalent and form a proportion.</p>

- 54) Write the ratio of apples to all fruit: 3 bananas; 5 apples; 9 oranges
- 55) Determine whether the pair of ratios is equivalent and forms a proportion.
- $$\frac{\$2.48}{4 \text{ oz}} \stackrel{?}{=} \frac{\$3.72}{6 \text{ oz}}$$
- 56) In baseball, David has 10 hits out of 14 at bats. Adam has 15 hits out of 21 at bats. For each player, write a ratio that represents his total number of hits out of times at bat. Are these ratios equivalent?

Unit: Knowledge of Number Relationships and Computation
Objective: Determine or use ratios, unit rates and percentages in the context of the problem.

Example:

<p>*A rate is a fixed ratio between two quantities of different units, such as miles and hours, dollars and hours, points and games. If the second number of a rate is 1 then the rate is called a Unit Rate.</p> <p>*Unit Rate examples: 60 miles per hour or \$15 per hour</p>	<p>Last week Mike worked 30 hours and earned \$240. What was his rate of pay?</p> <p>*Divide the total earned by the numbers of hours -How much money did Mike earn? (\$240) -How many hours did he work? (30 hours) -determine the rate of pay -divide the amount of money earned by the # of hours</p> <p><u>Amount of \$</u> = $\frac{240}{30}$ = \$8 hours worked 30</p>	<p>The unit price of a can of tuna fish at the GHK Supermarket is \$2.43. How much will 7 cans cost?</p> <p>*Use the definition of unit price. -Unit price means the price of one unit or the price of one can of tuna fish (\$2.43 each) -multiply (\$2.43 x 7 = \$17.01)</p> <p>Seven cans of tuna fish cost \$17.01.</p>
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- 57) Chad purchased 6 Fierce Grape Gatorades for \$12.00. If Chad wanted to go back and buy one Tropical Punch Gatorade at the same price, how much would it cost?
- 58) Your family was headed to the beach for summer vacation. You drove 560 miles in 8 hours. Determine how many miles you drive per hour.
- 59) Giant Eagle was having a big 4th of July sale on sodas. Giant Eagle was selling Coke Fridge Packs at \$3.00 for 12 sodas. Determine the cost of one soda.

Unit: Knowledge of Number Relationships and Computation

Objective: Determine or use ratios, unit rates and percentages in the context of the problem.

Example:

<p>Solving Proportions</p> $\frac{8}{a} = \frac{10}{15}$ $8 \times 15 = a \times 10$ $120 = 10a$ $120 \div 10 = 10a \div 10$ $12 = a$	<p>Sometimes proportions involve percentages. In this case, we use the percent proportion.</p> $\frac{\%}{100} = \frac{\text{part (is)}}{\text{total(of)}}$	<p>Chad's football team played 25 games. They won 68% of them. How many games did the team win?</p> $\frac{68\%}{100} = \frac{x}{25}$ $68 \times 25 = 100x$ $\frac{1700}{100} = \frac{100x}{100} \quad X = 17$
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- 60) It is recommended that for every 8 square feet of surface, a pond should have 2 fish. A pond that has a surface of 72 square feet should contain how many fish?
- 61) An 8-ounce glass of Orange juice contains 72 milligrams of vitamin C. How much juice contains 36 milligrams of vitamin C?
- 62) Jake's club has 35 members. Its rules require that 60% of them must be present for any vote. At least how many members must be present to have a vote?

Unit: Knowledge of Number Relationships and Computation

Objective: Determine rate of increase and decrease, discounts, simple interest, commission and sales tax.

Example:

<p>Sales Tax -is a percent of the purchase price and is an amount paid in addition to the purchase price.</p> <p>Determine the total price of a \$17.55 soccer ball if the sales tax is 6%.</p> <p>-change the percent to a decimal and multiply -add price and tax to determine the total price</p> <p>$17.55 \times 0.06 = 1.07$ (tax) $17.55 + 1.07 = 18.82$</p>	<p>Commission -is the amount a salesman makes for selling items. To determine the amount of commission, change the % to a decimal and multiply by the total amount sold.</p> <p>Determine the commission for a RV salesman, whose sales for the month of March totaled \$149,000. The salesman earns a 4% commission.</p> <p>-change the percent to a decimal -multiply decimal and total sold</p> <p>$0.04 \times 149,000 = \\$5960$</p>
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- 63) Jeremy wants to buy a skateboard but does not know if he has enough money. The price of the skateboard is \$85 and the sales tax is 6%. What will be the total cost of the skateboard?
- 64) Blake bought two magazines for \$4.95 each. If the sales tax was 6.75%, what was the total amount that he paid for the magazines?
- 65) A car salesman earns 7% commission on his total sales this month. If he sells 2 cars at \$15,670 each and a truck at \$25,995, how much commission will he earn? (hint: find total sales first)

Name _____

8th Grade Summer Math, 2023 Answer Sheet

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