Incoming 8th Grade Math Summer Packet

This summer, you will complete two types of math tasks to keep your math skills strong:

1. **iXL Quizzes**:
   Complete the iXL quizzes. You **must submit your work** to receive credit.

2. **Create a Math Game:**
   Design a game based on a math skill we covered this year. Your game should fit inside a gallon-sized Ziploc bag and include:
   - Game directions
   - Game pieces
   - An answer key

Your game can be inspired by an existing board game or be a brand new idea. It should take about 10 to 15 minutes to play. If you prefer, you may create a digital game (such as Blooket or Jeopardy). If you create a digital game you will be required to attach the link in Google Classroom. All games must be your original work. You may use IXL and Envision Books or their online platforms for question ideas.

Topics to Consider:
- Rates & Unit Rates
- Proportion Word Problems
- Rational Numbers (adding, subtracting, multiplying, and dividing)
- Expressions (distributive property and factoring)
- Solving Two-Step Equations & Inequalities
- Graphing on the Coordinate Plane
- Percents (discounts, markups, percent change, and simple interest)
- Probability (simple and compound)

Suggested Pacing Guide

Use the following guide as a suggestion of when to complete quizzes and the games task during July and August. This will help you keep track of what work needs to be completed and keep your math skills strong throughout the summer!

Week of:	Tasks	Completed ☑
June 29th	iXL Summer Quiz 1- Integers	
	Choose type of game you will create	
July 6th	iXL Summer Quiz 2- Percents	
	Choose topics for game	
July 13th	iXL Summer Quiz 3- Ratios	
	Create Board and Pieces or setup online platform	
July 20th	iXL Summer Quiz 4- Fractions	
	Create 10 Questions	
July 27th	iXL Summer Quiz 5- Proportional Relationships	
	Create 10 Questions	
August 3rd	iXL Summer Quiz 6- Probability	
	Create Answer Key	
August 10th	iXL Summer Quiz 7- Equations	
	Finish Game Task	
August 17th	iXL Summer Quiz 8- Statistics	
	Finish Game Task	

All quizzes must be completed and turned in on the first day of school, September 2nd!

Guía de Ritmo Sugerida

Usa la siguiente guía como sugerencia para saber cuándo completar los exámenes y la tarea de juegos durante Julio y Agosto. Esto te ayudará a llevar un registro del trabajo pendiente y a mantener tus habilidades matemáticas en forma durante el verano !

Semana de:	Tareas	Terminado ☑
Junio 29	Cuestionario de Verano iXL 1-Números Enteros	
	Elige el tipo de juego que crearás	
Julio 6	Cuestionario de Verano iXL 2- Porcentajes	
	Elige temas para el juego	
Julio 13	Cuestionario de Verano iXL 3- Razones	
	Crea un tablero y piezas o configura una plataforma en línea	
Julio 20	Cuestionario de Verano iXL 4- Fracciones	
	Crea 10 preguntas	
Julio 27	Cuestionario de Verano iXL 5: Relaciones proporcionales	
	Crea 10 preguntas	
Agosto 3	Cuestionario de Verano iXL 6-Probabilidad	
	Crear Clave de Respuestas	
Agosto 10	Cuestionario de Verano iXL 7- Ecuaciones	
	Terminar la Tarea del Juego	
Agosto 17	Cuestionario de Verano iXL 8- Estadísticas	
	Terminar la Tarea del Juego	

¡Todos los exámenes deben completarse y entregarse el primer día de clases, Septiembre 2 !

Paquete de Verano de Matemáticas para 8° Grado

Este verano, completarán dos tipos de tareas de matemáticas para mantener fortalecidas sus habilidades matemáticas:

1. **Cuestionarios iXL:**
   Completa los cuestionarios de iXL. **Debes enviar tu trabajo para** recibir crédito.

2. **Crea un Juego de Matemáticas:**
   Diseña un juego basado en una habilidad matemática que vimos este año. Tu juego debe caber en una bolsa Ziploc de un galón e incluir:
   - Instrucciones del juego
   - Piezas de juego
   - Una clave de respuestas

Tu juego puede estar inspirado en un juego de mesa existente o ser una idea completamente nueva. Debería tomarse entre 10 y 15 minutos jugarlo. Si lo prefieres, puedes crear un juego digital (como Blooket o Jeopardy). Si creas un juego digital, deberás adjuntar el enlace en Google Classroom. Todos los juegos deben ser de tu original autoría. Puedes usar IXL y Envision Books o sus plataformas en línea para obtener ideas para las preguntas.

Temas a considerar:

- Tarifas y Tarifas Unitarias
- Problemas de Palabras sobre Proporciones
- Números racionales (suma, resta, multiplicación y división)
- Expresiones (propiedad distributiva y factorización)
- Resolver Ecuaciones e Inecuaciones de Dos- Pasos
- Graficar en el Plano de Coordenadas
- Porcentajes (descuentos, márgenes, cambio porcentual e interés simple)
- Probabilidad (simple y compuesta)

Name: _____

7th Grade Summer Quiz 1- Integers

1. Graph −11, −17, and −13 on the number line.

2. Graph 16, 10, and −2 on the number line.

3. Add:

$^{-}12 + {}^{-}72 =$ ☐

4. Add:

$96 + {}^{-}86 =$ ☐

5. Add:

$7 + 54 + 15 + {}^{-}73 =$ ☐

6. Divide:

$320 \div {}^{-}8 =$ ☐

7. Subtract:

$^{-}42 - {}^{-}85 =$ ☐

8. Subtract:

$67 - {}^{-}37 =$ ☐

9. Evaluate the expression.

$7 + (4 - 9) \div 5$

10. Evaluate the expression.

$10 + 9 \times (1 - 6)$

 Name: _____

7th Grade Summer Quiz 2- Percents

1. How do you write **59%** as a decimal?

2. How do you write **1.0** as a percentage?

   Write your answer using a percent sign (%).

3. Complete the following statement.

   20% of $3.30 = $

4. Complete the following statement.

   40% of $5 = $

5. Anna's town voted on a new speed limit. 90% of the 50,000 votes were in favor of the new speed limit. How many votes were in favor?

[ ] votes

6. Last Wednesday, students could choose ham or turkey sandwiches for lunch. The cafeteria made 200 sandwiches in all, 70% of which were turkey. How many turkey sandwiches did the cafeteria make?

[ ] turkey sandwiches

7. There are 6,000 houses in Nathan's town. Last summer, 76% of the houses were for sale. How many houses were there for sale last summer?

[ ] houses

8. A company took a survey about its new product. 89 people liked the new product and 11 people did not. What percentage of the people surveyed liked the new product?

Write your answer using a percent sign (%).

[ ]

9. Complete the following statement.

50% of $2 = $[ ]

10. $3 is what percent of $10?

Write your answer using a percent sign (%). For example, 0.5%, 12.7%, or 56%.

Name: _____

7th Grade Summer Quiz 3- Ratios

1. Find the number that makes the ratio equivalent to 11:3.

   ☐:27

2. Find the unit rate.

   597 liters in 3 days = ☐ liters per day

3. Find the unit rate.

   24 laps in 3 days = ☐ laps per day

4. Find the unit rate.

   308 deliveries in 28 hours = ☐ deliveries per hour

5. Reggie is deciding when to go bowling with his friends. Friday night is glow-bowling night, with 5 glow-bowling games for $22.50. But the early-bird special on Saturday morning offers 8 games for $30. How much more does glow-bowling cost per game?

   $☐ per game

6. Jacob decided to start saving for college. After 3 months, he had saved $174. His friend Victoria was inspired to do the same. After 6 months, she had saved $360. If they are both saving money at a constant rate, how many more dollars per month does Victoria save than Jacob?

$ [ ] per month

7. Solve for m in the proportion.

$$\frac{8}{6} = \frac{m}{30}$$

$m =$ [ ]

8. Solve for y in the proportion.

$$\frac{72}{54} = \frac{64}{y}$$

$y =$ [ ]

9. Marcy loves to do puzzles. Last week, she spent 2 hours putting together a puzzle with 300 pieces. This week, she wants to put together a puzzle with 450 pieces.

If she keeps the same pace, how many hours should it take Marcy to put the puzzle together this week?

[ ] hours

10. Javier teaches yoga classes at his community center. In a 60-minute class last night, he taught 30 poses. Today, he has a 30-minute class.

If he teaches at the same rate, how many poses will Javier teach in today's class?

☐ poses

 Name: _____

7th Grade Summer Quiz 4- Fractions

1. Add.

$\frac{7}{9} + \frac{1}{6} =$ ☐

2. Billy went to the county fair last weekend. When he got there, he had to walk 3/4 of a mile from the car to the entrance. Then he walked 1/4 of a mile to the carnival rides and 3/4 of a mile from the carnival rides back to the car. How many miles did Billy walk in all?

☐ miles

3. During a school play, Christina staffed the snack bar. She served 5/8 of a pitcher of lemonade during the first intermission, 1/2 of a pitcher during the second, and 1/2 of a pitcher during the third. How many pitchers of lemonade did Christina pour in all?

☐ pitchers

4. Multiply. Write your answer as a fraction or as a whole or mixed number.

$\frac{1}{5} \times 9\frac{5}{8} =$ ☐

5. Multiply. Write your answer as a fraction or as a whole or mixed number.

$2\frac{1}{4} \times 9\frac{2}{3} =$ ☐

6. Divide.

$4 \div 2\frac{2}{3} =$ ☐

7. A biologist studied how cells grow by adding liquid protein to cell samples. She reported in her study that she divided 9 2/3 ounces of liquid protein evenly between 2 cell samples. How much liquid protein did she give to each cell sample?

Write your answer as a fraction or as a whole or mixed number.

☐ ounces

8. The elephants at the zoo eat 9 buckets of bananas each day. The zookeeper bought 7 1/2 buckets of bananas. How many days will the bananas last?

Write your answer as a fraction or as a whole or mixed number.

☐ days

9. How many more cups of peaches than sugar are needed?

Peachy peach cobbler

INGREDIENTS:

$3\frac{3}{4}$ cups peaches

$1\frac{1}{4}$ cups sugar

$\frac{1}{2}$ cup flour

$\frac{1}{2}$ cup butter

1 teaspoon cinnamon

2 teaspoons baking powder

$\frac{7}{8}$ teaspoon salt

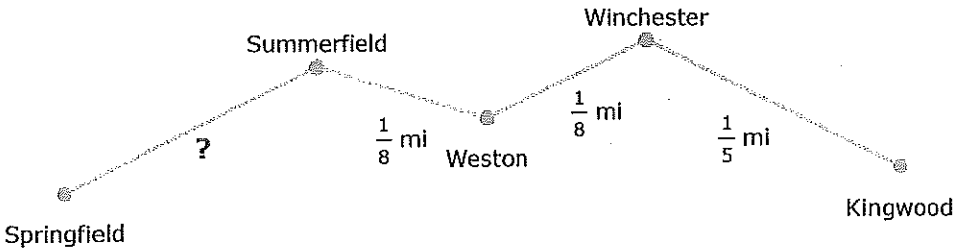
$1\frac{1}{2}$ teaspoons vanilla

Write your answer as a fraction or as a whole or mixed number.

[ ] cups

10. Using the paths shown, the distance from Springfield to Winchester is $\frac{9}{20}$ of a mile.

How far is it from Springfield to Summerfield?



Write your answer as a fraction or as a whole or mixed number.

[ ] mi

 Name: _____

7th Grade Summer Quiz 5- Proportional Relationships

1. Meg is participating in a fun run to raise money for the West Side Children's Hospital. The run is held at Meg's high school track. The more laps Meg runs around the track, the more money she raises for the hospital.

   There is a proportional relationship between the number of laps Meg runs, x, and the amount of money she raises for the hospital (in dollars), y.

x (laps)	y (dollars)
2	$32
4	$64
5	$80
6	$96

   What is the constant of proportionality? Write your answer as a whole number or decimal.

   _____ dollars per lap

2. Ling wants to save up some money to buy a new smartphone, so she babysits on the weekends.

This table shows the relationship between the time Ling spends babysitting (in hours), x, and the amount of money she earns babysitting (in dollars), y.

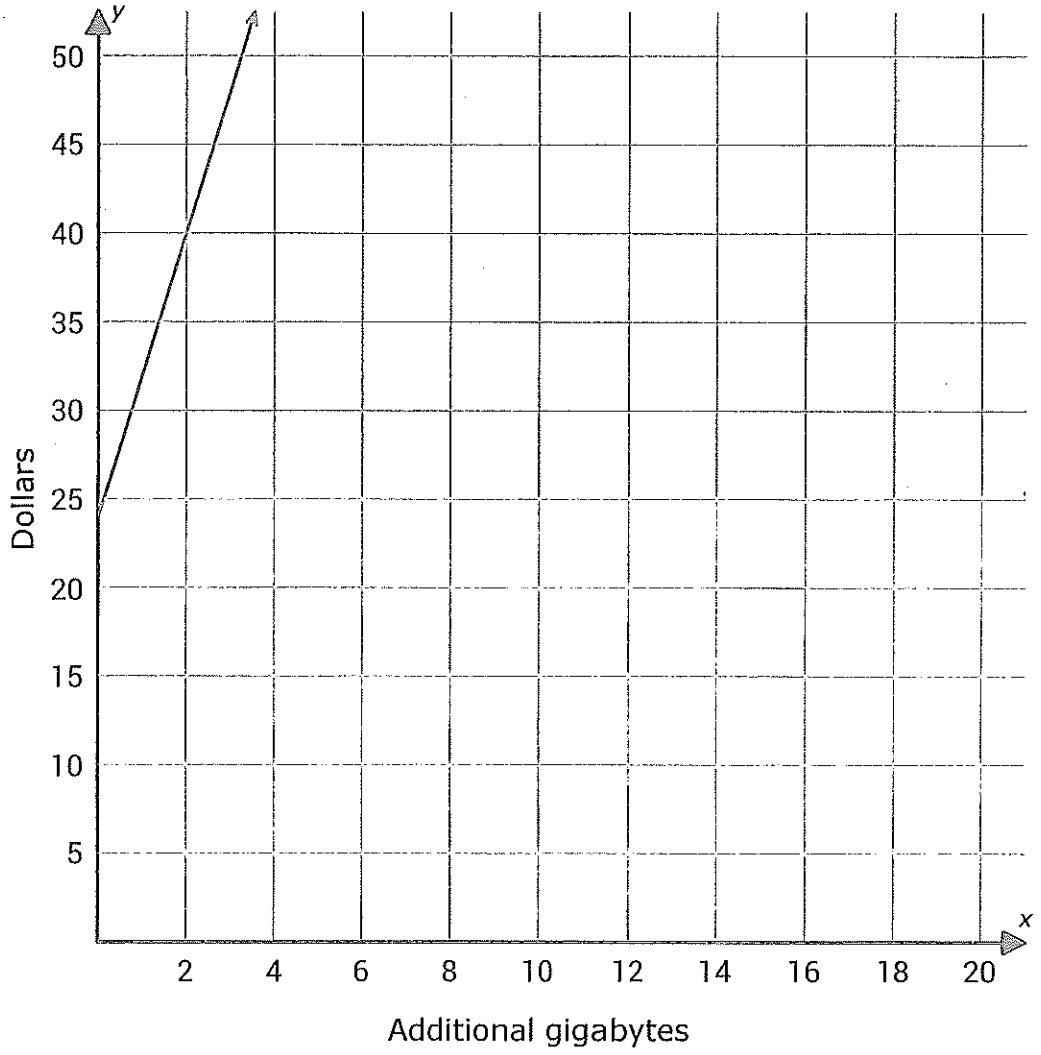
x (hours)	y (dollars)
1	$17
2	$34
4	$68
5	$85

According to the values in the table, do x and y have a proportional relationship?

- yes
- no

3. Susan's smartphone plan with Stark Mobile includes unlimited talk and text and a certain amount of data every month. If she uses additional data, she is charged more on her bill.

This graph shows the relationship between the number of additional gigabytes of data Susan uses in a month, x, and the total amount (in dollars) of her bill, y.

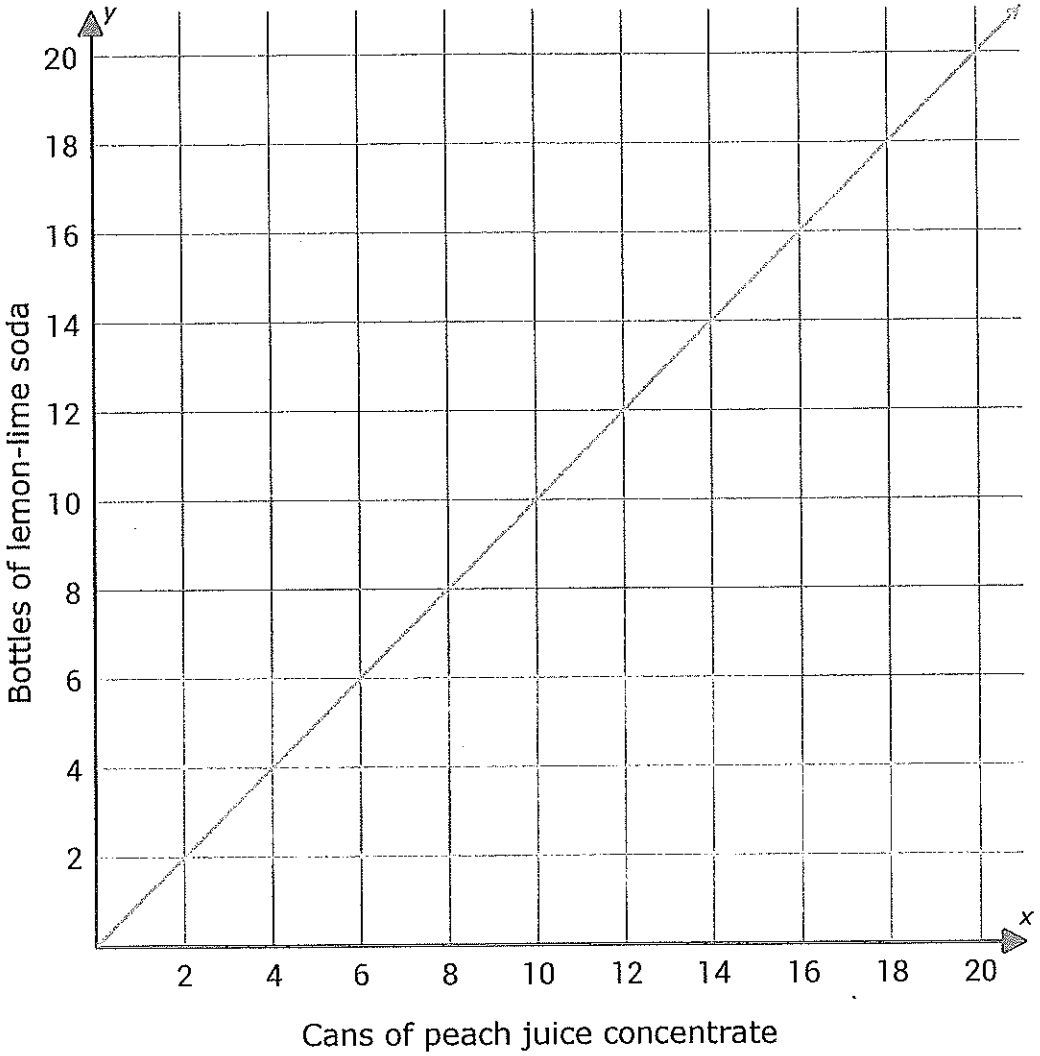


Do x and y have a proportional relationship?

- yes
- no

4. Noah is making his special punch for the *Starry Night* homecoming dance.

This graph shows the relationship between the number of cans of peach juice concentrate in a punch bowl, x, and the corresponding number of bottles of lemon-lime soda, y.

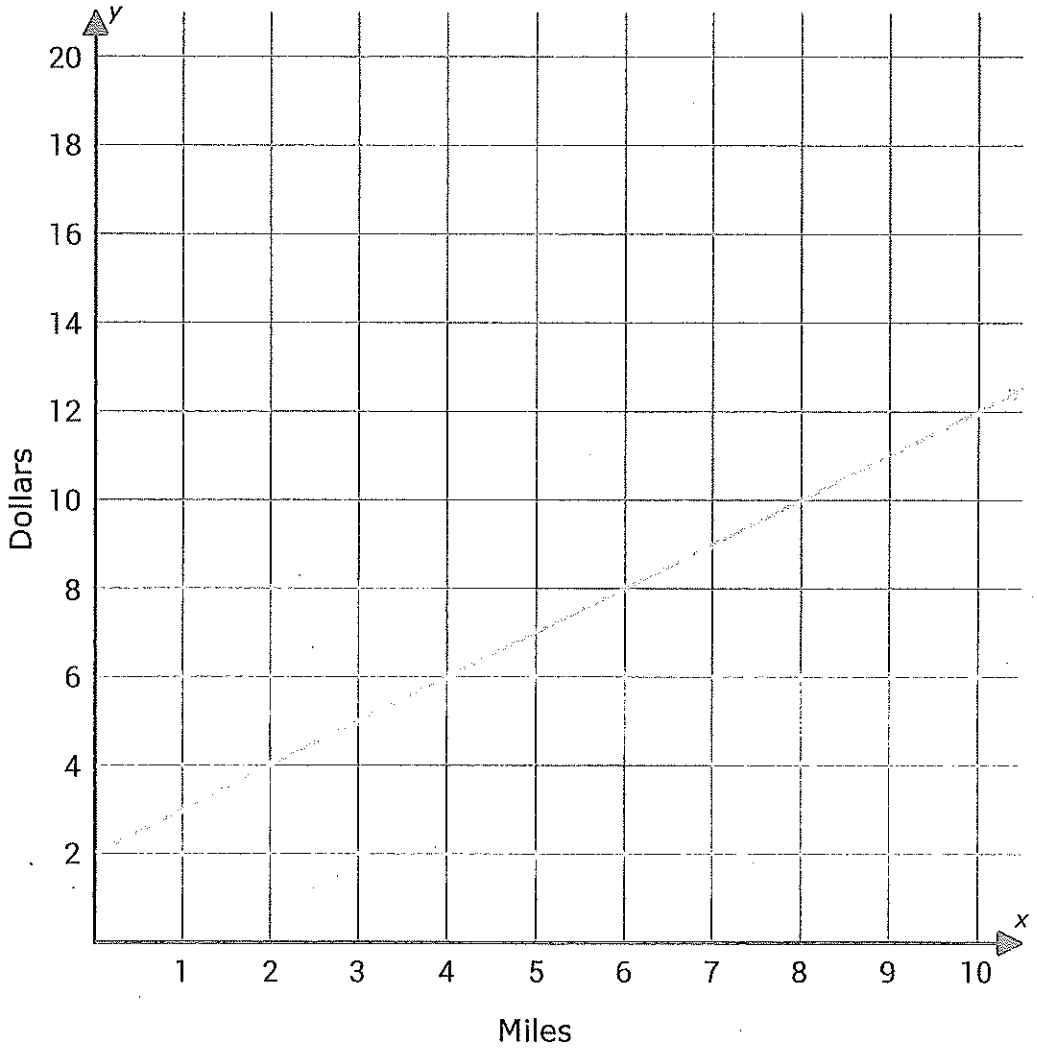


Do x and y have a proportional relationship?

- yes
- no

5. To make some extra money on the weekends, Rafi drives for the City Express ride sharing service. During regular hours, passengers are charged a flat fee plus an additional fee per mile of the ride.

This graph shows the relationship between the distance (in miles) Rafi drives a passenger, x, and the amount (in dollars) the passenger is charged, y.



Do x and y have a proportional relationship?

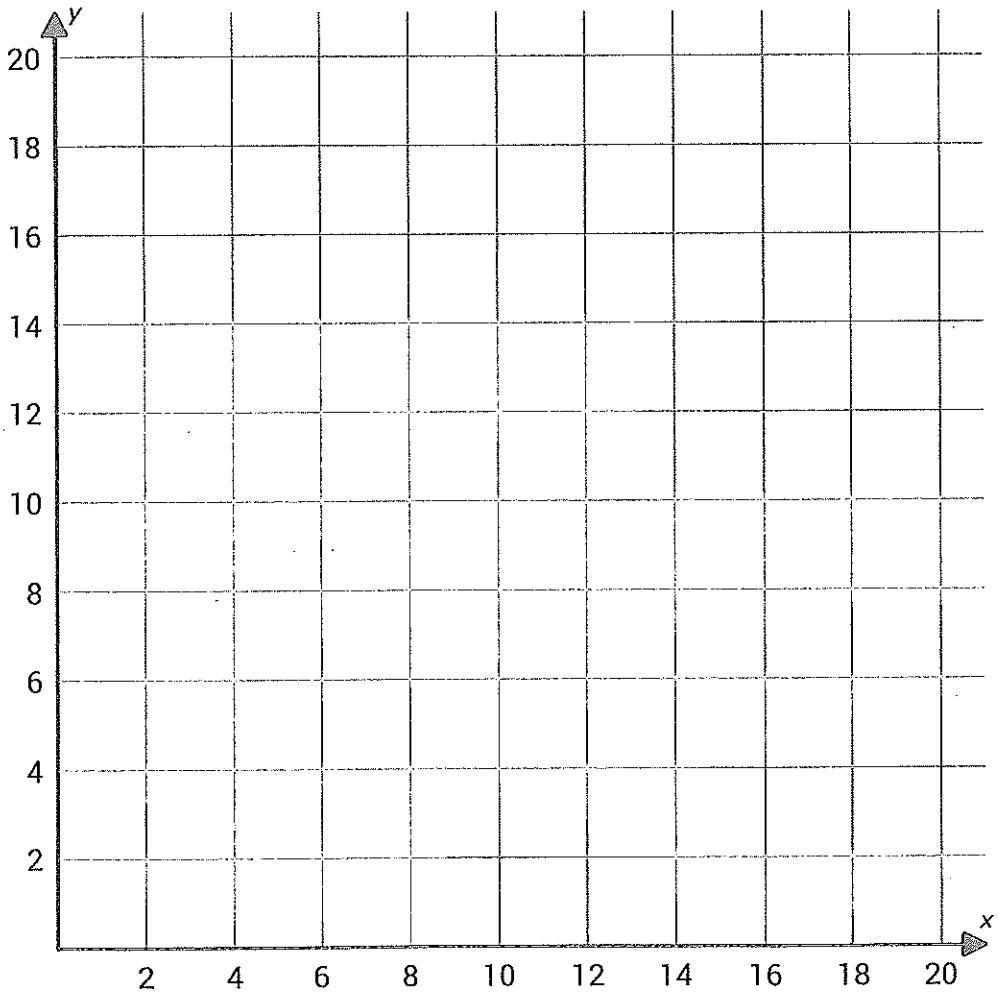
- yes
- no

6. Use the equation to complete the table.

$$y = \frac{3}{5}x$$

x	y
0	
10	
20	

Now, graph the equation.

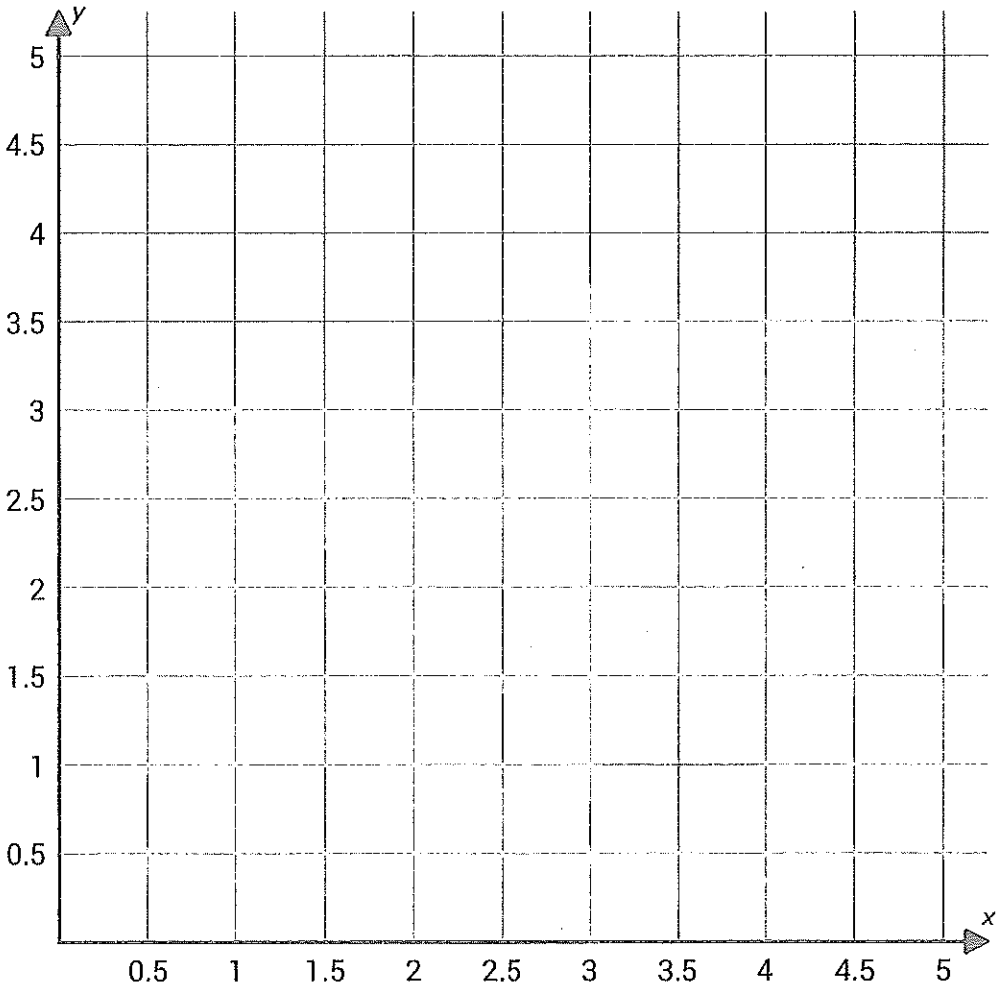


7. Use the equation to complete the table.

$y = x$

x	y
1.5	
2	
2.5	
3	

Now, graph the equation.



8. Lee is in charge of housekeeping at the Seaside Hotel. He makes sure there are enough clean towels for each room that has been booked for the night.

There is a proportional relationship between the number of rooms booked, x, and the number of towels Lee needs to supply, y.

x (rooms)	y (towels)
6	24
9	36
11	44
13	52

Write an equation for the relationship between x and y. Simplify any fractions.

$y =$ ☐

9. After a shipwreck, Florence is stranded on a desert island. She needs to build a shelter, so she makes an axe using materials from the wreckage and starts cutting down trees.

There is a proportional relationship between the number of days Florence is stranded on the island, x, and the total number of trees she cuts down, y.

x (days)	y (trees)
5	30
8	48
9	54
14	84

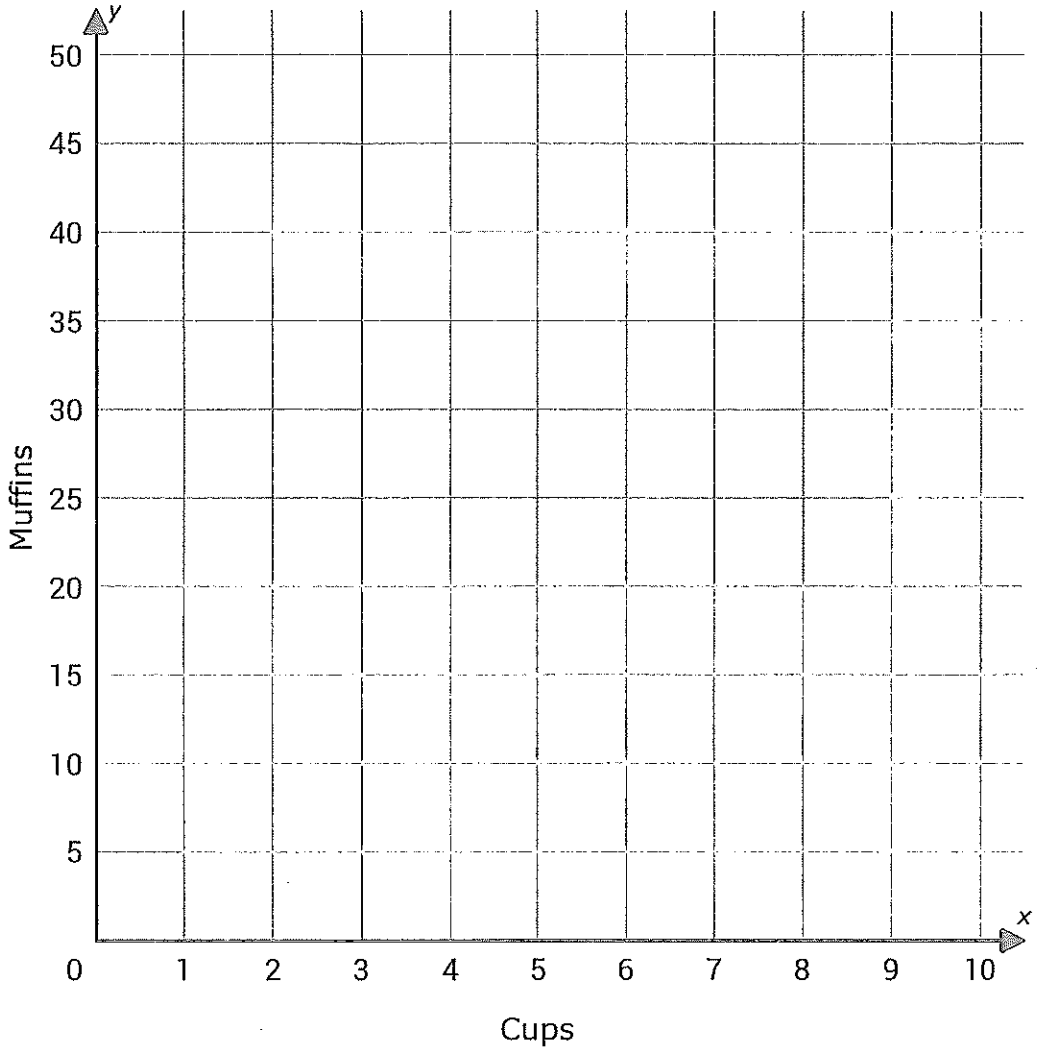
Write an equation for the relationship between x and y. Simplify any fractions.

$y =$ ☐

10. Donald loves to bake blueberry muffins for his friends and family. Donald can bake 15 muffins for each cup of flour he uses.

There is a proportional relationship between the volume of flour Donald uses (in cups), x, and the number of muffins he bakes, y.

Graph this relationship. Select two points to draw a line.



Name: _____

7th Grade Summer Quiz 6- Probability

1. A teacher recorded the primary languages that the children in his class speak at home.

Chinese	8
Spanish	4
English	2
French	1
Vietnamese	1

What is the probability that a randomly selected child speaks primarily Chinese at home?

Write your answer as a fraction or whole number.

P(Chinese) = ☐

2. There are 15 sedans on a used car lot, along with 54 other vehicles.

What is the probability that a randomly selected vehicle will be a sedan?

Write your answer as a fraction or whole number.

P(sedan) = ☐

3. Of the last 20 trains to pull into Lakeside Station, 14 were full. What is the experimental probability that the next train to pull in will be full?

Write your answer as a fraction or whole number.

P(full) = ☐

4. Henry's Pizza sells pizza by the slice for lunch. An employee recorded how many slices of each type of pizza were sold today.

onion	4
pepperoni	36
cheese	20
supreme	6
veggie	16

What is the experimental probability that the first slice sold during lunch tomorrow will be a slice of cheese pizza?

Write your answer as a fraction or whole number.

P(cheese) = ☐

5. If you flip a coin 38 times, what is the best prediction possible for the number of times it will land on tails?

☐ times

6. If you flip a coin 62 times, what is the best prediction possible for the number of times it will land on heads?

☐ times

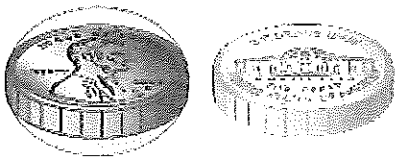
7. Lena is designing a bathroom. There are 10 different bathtubs and 3 different sinks to choose from. For the wallpaper, Lena has 7 options. Lastly, there are 4 possibilities for the tile. How many different bathrooms can Lena design?

☐ bathrooms

8. Emmy is planning a day out for her grandmother's birthday. They are going to have lunch at one of her grandmother's 10 favorite restaurants, and then they will go shopping at one of her grandmother's 2 favorite stores. Assuming the order of the activities doesn't matter, how many different ways can Emmy plan her grandmother's birthday outing?

☐ ways

9. What is the probability of both coins landing on tails?



Write your answer as a fraction or a whole number. With fractions, use a slash (/) to separate the numerator and denominator.

☐

10. Grayson surveyed some students at his school about their favorite colors. Of the students surveyed, 2 said orange was their favorite color, while 36 of the students had other favorite colors. What is the experimental probability that the next student Grayson talks to will pick orange?

Write your answer as a fraction or whole number.

P(orange) = ☐

Name: _____

7th Grade Summer Quiz 7- Equations

1. Write the sentence as an equation.

   388 is equal to 2 plus the product of g and 194

   [ ]

2. Solve for s.

   $532 = -7s$

   $s =$ [ ]

3. Solve for g.

   $g + 23 = 633$

   $g =$ [ ]

4. Solve for w.

$$-1 = \frac{w + 13}{-2}$$

$w =$ ☐

5. Solve for f.

$$\frac{f}{4} + 15 = 17$$

$f =$ ☐

6. Solve for d.

$$3d - 3 = 12$$

$d =$ ☐

7. Solve for b.

$$\frac{b}{7} - 2 = 1$$

$b =$ ☐

8. Solve for n.

$11 = 5 + 3n$

$n =$ ☐

9. Solve for q.

$-\frac{9}{10}(q + 3) = -2$

Write your answer as a fraction or as a whole or mixed number. Do not use decimals.

$q =$ ☐

10. Solve for x.

$-\frac{1}{8}x + 2 = 4$

Write your answer as a fraction or as a whole or mixed number. Do not use decimals.

$x =$ ☐

 Name: _____

7th Grade Summer Quiz 8- Statistics

1. What is the mean? If the answer is a decimal, round it to the nearest tenth.

5 2 4 8 4 3

2. What is the mode?

7 9 7 2 2 7 9

3. What is the range?

4 0 3 3 0 2 0 0 4 5

4. For a homework assignment, Hansen measured the volume of 5 drinking glasses in his family's kitchen. The volumes of the glasses were:

7 ounces 9 ounces 9 ounces 8 ounces 6 ounces

What was the median volume?

☐ ounces

5. What is the median?

4 3 8 1 0 3 3 2

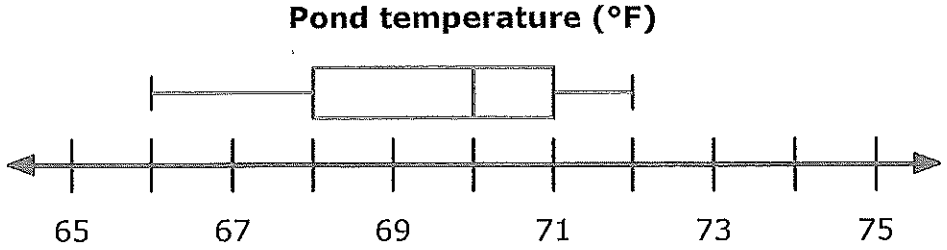
☐

6. Select the outlier in the data set.

511 663 4119 646 616 339 270 686 397 249

773

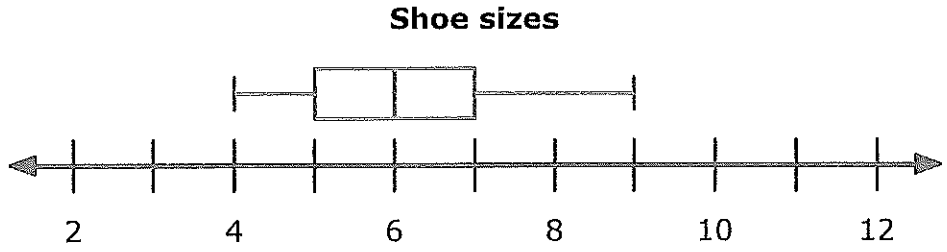
7. For a science project, Denise recorded the temperature of a nearby pond each day.



What was the median temperature of the pond?

[ ] °F

8. At soccer practice, Mike asked each of his teammates to write down their shoe size.



What is the interquartile range for Mike's teammates' shoe sizes?

[ ] sizes

9. Colton has the following data:

12 14 9 13 11 14 u 18 15 9

If the mode is 9, which number could u be?

9 14

10. Eduardo has the following data:

3 2 5 10 3 2 10 5 10 b

If the range is 8, which number could b be?

5 20