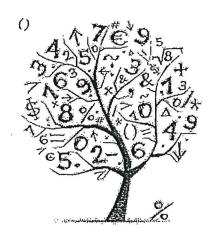
SUMMER MATH FOR STUDENTS ENTERING SEVENTH GRADE



Dear Parents and Guardians,

To help students retain math concepts and skills learned this school year, a summer math packet has been created for your child. The packet contains practice that will review, maintain, and reinforce the skills and concepts introduced, developed, or mastered during the school year. Parent participation to review the student's work is encouraged. Please initial the bottom of each page that you review with your child. The summer math packet is to be completed throughout the summer. It is not meant to be completed before school is out this year or just before school starts in the fall. Students will benefit from completing the packet a bit at a time. Please have your child turn in the math packet to the homeroom teacher or math teacher during the first full week of school in the fall.

Students should also visit MobyMax regularly throughout the summer to work on lessons that support individual student learning. MobyMax will find and help resolve learning gaps with adaptive differentiated instruction. This will help them to be MATHTASTIC!

Have a blessed, fun and safe summer!

Mrs. Moore

Tracking Sheet for Moby Max

Keep track of your daily/weekly Moby Max Math minutes in the calendar windows below. The recommendation is 30 minutes per week.

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Weekly Totals:
6/10 - 6/16:
6/17 – 6/23:
6/24 - 6/29:
7/1 – 7/7:
7/8 – 7/14:
7/15 – 7/21:
7/22 - 7/28:
7/29 – 8/4:
8/5 – 8/11:
8/12 - 8/18:



June Total: ______

July Total: _____

August Total: _____

Summer Total: _____



Use an open circle at 34 to show that 34 is not in

draw an arrow to the left

to show all the numbers

Use a closed circle at 100

to show that 100 is in the solution set. Then draw an

arrow to the right to show all the numbers greater

the solution set. Then

less than 34.

than 100.

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Zeke is thinking of a number less than 34.

Zeke could be thinking of many numbers.
To represent them, you can use an inequality or a number tine diagram:

Abby says that the number of stars in the sky is equal to or greater than 100:

You can also describe this situation with an inequality or a number line diagram.

Jake said that the number of stars he saw was 5 less than 129. Does 129 -5 make the mequality $s \ge 100$ true?

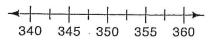
$$s \ge 100$$
 $129 - 5 \ge 100$
 $124 \ge 100$

So, the expression (129 - 5) makes the meguality $s \geq 100$ true.



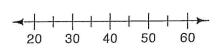
Make a number line diagram for the inequality. Then find a number that makes the inequality true.

1.
$$n \le 345$$



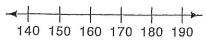
 $_{}$ makes $n \leq 345$ true

2.
$$z > 40$$



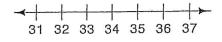
____ makes z > 40 true.

3.
$$m < 170$$



 $_{\rm makes} m < 170$ true.

4.
$$x \ge 35$$



____ makes $x \ge 35$ true.

Discuss and Write

5. Why is x = 43 not in the solution set for the inequality x < 34?

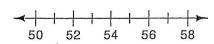
Practice

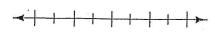
Make a number line diagram for the inequality. Then find a number that makes the inequality true.

6.
$$x \le 48$$



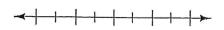
7.
$$n > 52$$



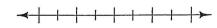




10.
$$p > 25$$



11.
$$y \le 17$$



Tell whether the number makes the inequality $x \ge 27$ true.

Problem Solving

Write an inequality to describe the situation. Then answer the question.

- 16. Ariel exercises for at least forty-five minutes each day. Could she have exercised for fifteen minutes less than an hour on Tuesday?
- 17. Abe's family wants to buy a house less than 10 miles from his school. He currently lives 15 miles away from his school. Will his family consider a house 5 miles closer?

Critical Thinking

18. Graph the numbers that are solutions of both x > 2 and x < 6 on a number line. Describe the solution. Give an example of a number that is a solution to both and an example of a number that is not.



Objective: To write an inequality to represent a constraint or condition in a real-world situation

You can use what you know about inequalities to model real-world situations:

Ms. Lawrence's truck cannot earry more than 1000 pounds safely. What weights can the truck safely carry?

- To find the weights that the truck can safely carry, write and graph an inequality:
- Let w represent the number of pounds the truck can safely carry. Write the inequality.
- Q Graph the solution set on the number line
- O Interpret the graph

All; weights greater than or equal to 0 pounds and less than or equal to 1000 pounds are part of the solution.

So, the truck can safely carry any weight less than or equal to 1000 pounds $w \le 1000$

The truck cannot carry more than 1,000 pounds

0 200 400 600 800 1000 1200

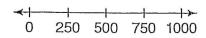
The graph of the inequality includes numbers less than 0, but it does not make sense for a truck to carry less than 0.

Practice

Graph the inequality. Then explain which part of the solution set makes sense for the given situation.

1. An elevator can safely carry at most 750 pounds. What weights can the elevator safely carry?

 $y \le 750$



2. A contractor wants to mix more than 100 gallons of paint. What amounts of paint might be mixed?

x > 100

Discuss and Write

Practice

Write an inequality. Then graph the inequality on a separate piece of paper. Explain which part of the solution set makes sense for the given situation.

- 4. The gas tank in Mr. Rock's car can hold 30 gallons. He is filling the tank. How many gallons of gas might he pump into the tank?
 - 5. A submarine is 500 feet below the ocean surface and 1000 feet above the ocean floor. From that position, how many feet can the submarine rise?
- 6. Martha is packing toys. Each box can hold 20 toys. How many toys might she have packed into the last box?
- 7. A theater can hold up to 500 people. What are the possible numbers of people that could attend a performance at the theater?

Problem Solving

Solve. Use the strategy that works best for you. Justify your answer.

- 8. Andy has 5 boxes. Each box can hold no more than 12 light bulbs. What might be the total number of light bulbs that are in 3 boxes?
- 9. Each shelf can hold 15 snow globes. How many snow globes might be displayed on 5 shelves?

- 10. Marty's toy car can travel up to 88 meters per hour. Jenny's toy car can travel up to 76 meters per hour. If both cars are traveling side-by-side, how fast are they going?
- 11. A restaurant can hold 75 people. Wilma hosts a party for her grandmother at the restaurant. How many guests can she invite?

Critical Thinking

12. A bus runs every quarter hour. Andrew says the time he has to wait is represented by the inequality t < 15. What does t stand for? Is Andrew's inequality always true? Explain.

Name _____

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Objective: To identify and answer statistical questions

You can get a better understanding of statistical information that is visually displayed by answering statistical questions. Statistical questions are those that require investigation, analysis, comparison, or contrast of more than one data point.

- Tell whether the questions are statistical or not statistical and why.
 - How much time did Dan spend on the phone on Thursday?

This is not a statistical question. Why? Only one piece of data is needed to answer it. Dan spent 50 minutes on the phone on Thursday.

Who typically spent more time on the phone each day?

This is a statistical question. Why? The times vary for each day. To answer, it, you oneed to analyze and compare all the data at once: Here are two methods.

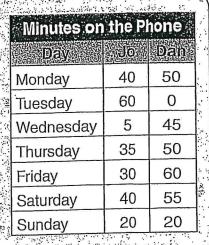
Method: 1 — Make and compare dot plots. These dot plots show the time Jo and Dan spent on the phone.

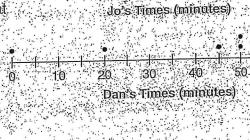
Method:2—Find and compare the means of both sets of data.

Jo's mean = 32.9

Dan's mean = 40.0

So, both methods show that Dan typically spent more time on the phone each day.





20

10

30

Practice

Tell whether the question is statistical or not statistical and why.

- 1. How many email messages did you receive yesterday?
- 2. How long was a typical email message you received yesterday?

Discuss and Write

- 3. Consider these two questions:
 - a. How far is it from your home to your school?
 - b. How long does it take you to get to school in the morning? Which one is a statistical question? Which one is not statistical? Explain your reasoning.

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Practice

Tell whether the question is statistical or not statistical and why.

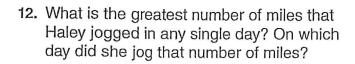
- 4. Which brand of battery lasts longer?
- 5. How many classrooms are in your school?
- 6. How many siblings do students in your class have on average?
- 7. Did a class get better at doing sit-ups after a week of practice?

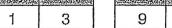
Problem Solving

Solve. Use a strategy that works best for you. Show your work.

Haley makes a table of the number of miles she jogs each day. Then she makes a dot plot of the data.

- 8. How many miles did Haley jog on Day 11?
- 9. Is the question in problem 8 a statistical question? How do you know?
- 10. How many miles does Haley jog on an average day? Justify your answer.
- 11. Is the question in problem 10 a statistical question? How do you know?

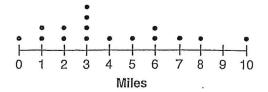




Miles Haley Jogs

Day	Miles			
1	3			
2	10			
3	3			
4	6			
5	4			
6	8			
7	3			
8	5			

Day	Miles
9	3
10	2
11	7
12	6
13	1
14	1
15	0
16	2



13. On how many days did Haley jog farther than the mean number of miles?

Critical Thinking

14. Noah says the question asked in problem 12 is not statistical because the answer is a single value from one day. Do you agree? Why or why not?

entina ilkasony.

Ratio 21:3

 $21 \times 2, 3 \times 2$

 $21 \times 3, 3 \times 3$

 $21 \times 4, 3 \times 4$

 $21 \times 5, 3 \times 5$

 $21 \times 6, 3 \times 6$

Galories

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26

52

78

?

130

156

+26

+26

+26

-26

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6

9

12

15

18

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Exercises

8

12

16

20

21

42

63

84

105

126

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+4(

Objective: To use tables of equivalent ratios to solve problems

For a class trip; 3 chaperones are needed for every 21 students. How many chaperones are needed for 126 students?

To find how many chaperones are needed, write the ratio of students to chaperones, and then use this ratio to generate a table of equivalent student to chaperone ratios. Students to Chaperones ratio: 21 to 3.

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So, 18 chaperones are needed for 126 students

Given the table of equivalent ratios of Minutes Exercised to Calories Burned, find the missing values:

➤ To find the missing values in an equivalent ratio table, look for a pattern in each column. In the Minutes Exercised column, each value increases by 4.

Use the pattern to find $20 \pm 4 = 24$.

In the Calcries Burned column, each value increases by 26.

Use the pattern to find $78 \pm 26 = 104$.

To check your values, use multiplication as repeated addition.

Multiply 4 and the row number of the missing value: 4 imes 6 = 24.

Multiply 26 and the row number of the missing value: $26 \times 4 = 104$

So, the missing values are 24 and 104.

Practice

Use equivalent ratios.

- 1. There are 24 pencils in each box. Complete the table to show the number of pencils in 1 to 5 boxes.
- 2. What is the ratio of boxes to pencils? Ratio _____
- 3. How many boxes are there for 96 pencils? _____
- 4. How many pencils are needed to fill 5 boxes? _____

Pencils
24

Discuss and Write

5. How did you use equivalent ratios to complete the table?

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Practice

Use equivalent ratios.

- Eighteen dollars is needed for every 2 tickets.Complete the table to show the costs of the tickets.
- 7. How many tickets can you get for \$72? _____
- 8. What is the cost of 12 tickets? _____
- 9. What is the cost of 1 ticket? _____
- **10.** What is the greatest number of tickets you can get if you have \$100? _____
- 11. How much will it cost for you and 6 friends to get tickets?

Tickee	Price
2	\$18
4	
6	\$54
	\$72
10	\$90
12	
,	

Problem Solving

The table shows Tommy's reading rate. Complete the table.

12. Tommy reads 10 pages for Language Arts class and 8 pages for History class. How long will it take him?

40	Tommer to a de 10 manua for Malla alana and 1 manua
	Tommy reads 16 pages for Math class and 4 pages
	for Science class. If he starts reading at 6:30 P.M. and
	takes a 5-minute break, at what time will he finish?

14. What is the greatest number of full pages Tommy can finish reading in 45 minutes?

Winutes	Pages
7	2
	4
21	6
	· 10
42	12
49	14

Critical Thinking

15. Explain two ways you can use the table to find the cost of 36 golf balls.

Collegile.	Price
6	\$8
12	\$16
36	? .



Chilarible conve

Objective: To use tables to compare ratios and solve problems

You can make a table to compare two or more ratios. Use the table to generate and organize a list of equivalent ratios.

There are 8 girls for every 12 boys.

The ratio of girls to boys in Ms. Boylan's class is 2: 3 The ratio of girls to boys in Mi. Hall's class is 3: 4. Which class has the greater ratio of girls to boys?

Ms. Boylan's Class citis 2 4 6 8 50) 3 6 9 12

Make a table of equivalent ratios
 for each class.

Mr. Hall's Class

- 2 Look for numbers you can compare Try to find the numbers of boys that are the same in both classes
- Chils
 3
 6
 9
 12

 Exercise
 4
 8
 12
 16

Both tables have an entry for 12 boys.

There are 9 girls for every 12 boys.

$$\frac{9}{12} \geqslant \frac{8}{12}$$

So, Mr. Hall's class has the greater ratio of girls to boys:

Practice

Compare the ratios using a table. Then identify which ratio is greater.

- 1. a) 6:15
- **b)** 9:20
- 2. a) 4 to 9
- **b)** 5 to 12

6	12	
15		

4	8	
9		

5 10 12

- 3. a) $\frac{7}{30}$
- **b)** 9 : 20

4. a)

v 19	
$\frac{1}{32}$	

h)	14
D)	24

- 1	1
1	1

Discuss and Write

5. For one of the tables in the exercises, describe how to make a list of equivalent ratios. Explain why some of the tables do not need to be completely filled with terms.



elioografiaessoirus

Practice

Compare the ratios using a table. Then identify which ratio is greater.

6. a) 3:8

- **b)** 5:12
- 7. a) 7 to 10
- b) 11 to 15

8. a) $\frac{8}{18}$

- **b)** $\frac{10}{24}$
- 9. a) $\frac{5}{6}$
- b) 6/8

Problem Solving

Solve. Show your work and justify your answer.

- 10. Six cans of juice cost \$2. Eight cans of the same juice cost \$3. Each can is 8 ounces. Which is the better buy?
- 11. A bag of 10 oranges costs \$4. A bag of 12 oranges costs \$5. Which is the better buy?
- 12. Jan can ride her bike 32 miles in 5 hours. Hal can ride his bike 20 miles in 3 hours. Who would finish a 25-mile bike race first?
- 13. Quinn can type 275 words in 5 minutes. Rita can type 675 words in 15 minutes. Who can type 5,000 words faster?

Explain Your Reasoning

14. Roe is comparing the ratios 3:4 and 4:5. Is this the same as comparing the ratios 4:3 and 5:4? Use tables to justify your answer.

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Name _____



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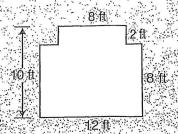
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Objective: To find the area of a complex figure by dividing the figure into simpler shapes

You cam: find the area of complex figures by decomposing or composing them into shapes whose areas you can find

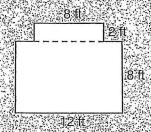
Jamet is carpeting a floor. The shape of the floor is shown. How many square feet of carpet are needed?

You can add or subtract areas to find the area of the floor.



Method 1. Decompose and add areas.

Look for simpler shapes that make up the floor. Divide the figure into two rectangles and label their dimensions



Pind the area of each part.

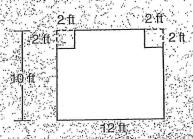
Area of large rectangle = length × width 96 ft = 12 ft × 8 ft

Area of small rectangle = length × width

Add the areas of the parts.

Method 2: Compose and subtract areas:

The floor is a 12-by 10-foot rectangle with a pair of 2-foot squares cut out.



(and the areas of the large rectangle and the small squares.

Area of large rectangle = length \times Width $120 \text{ ft}^2 = 12 \text{ ft} \cdot \times 10 \text{ ft}^2$

Area of one small square = length \times width $4 \text{ ft}^2 = 2 \text{ ft} \times 2 \text{ ft}$

3 Subtract the areas of the squares.

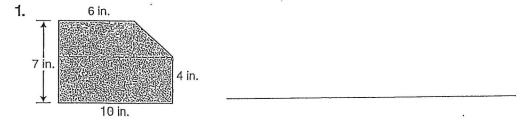
$$120 \, \text{ff}^2 - 4 \, \text{ff}^2 - 4 \, \text{ff}^2 = 112 \, \text{ff}^2$$

So, 112 square feet of carpet are needed for the floor.

16 ft = 8 ft × 2 ft

Practice

Add the areas to find the area of the figure. Show your work.



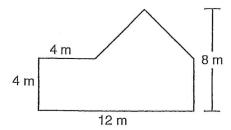
Discuss and Write

2. Explain another way to find the area of the figure in exercise 1.

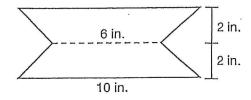
Practice

Find the area of each figure by making simpler shapes.

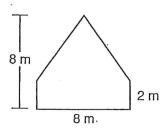
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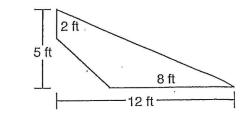
4.



5.



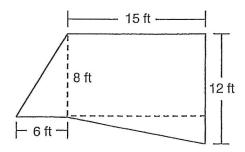
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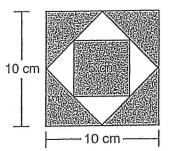
Problem Solving

Solve. Use a strategy that works best for you. Show your work.

7. Phil is spreading fertilizer over his entire garden, which has the shape shown. How many square feet must he cover?



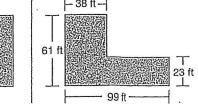
8. Cheryl is using wood to make the shaded part of the design shown. How many square centimeters of wood does she need?



Explain Your Reasoning

9. Is the area of the shaded part of the first figure shown equal to the area of the second figure shown? Tell how you found the answer.

61 ft 8 61 ft 38 ft 99 ft



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©Performance Task I Spice Emporium

Name :_____

Lena works at Spice Emporium, a store that sells spices from all over the world. Today she is preparing a mixture of spices for Turkish dishes. She uses 3.58 ounces of salt, 2.4 ounces of cumin, 1.25 ounces of black pepper, 1.1 ounces of oregano, 0.74 ounce of paprika, and 0.5 ounce of cayenne pepper.



A. Ms. McDonald wants to buy 9.25 ounces of the spice mix for her Turkish recipes. How much spice mix will Lena have left?

Another customer wants to buy 6.5 ounces of thyme. The canister of thyme has t ounces. Lena measures out the customer's order and puts the canister back. Later, she replenishes the thyme in the canister with 10.75 ounces.

B. Write an expression for the amount of thyme in the canister now. If the canister started with 8.1 ounces of thyme, how much is in the canister now?

Malik also works at Spice asks him to put 1.35 oun

©Performance Task I

Name _____

Malik also works at Spice Emporium. His manager asks him to put 1.35 ounces of salt, 0.8 ounce of pepper, and 0.09 ounce of saffron in each of 100 bags.



A. How much salt does Malik need? How much pepper? How much saffron?

Malik is making 36 small packs of chili spices and 15 large packs of chili spices. A small pack contains 2.35 ounces of spices. A large pack contains 10.8 ounces of spices.

B. How many ounces of chili spices should Malik make?

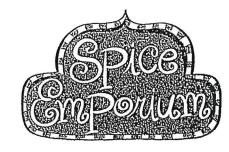
The jar of oregano contains 9.6 ounces of this most popular spice. Ms. Asher buys 3.75 ounces of the oregano. Then Mr. King buys 0.6 as much oregano as Ms. Asher bought.

C. How much oregano is left in the jar?

©Performance Task I Separating Spices

Name _____

Lena mixed 12.5 ounces of basil, 8.42 ounces of rosemary, 7.6 ounces of tarragon, and 20.25 ounces of a black pepper and sea salt mixture. She wants to separate the mixture equally into 100 bags.



A. Can Lena use bags that can hold 0.4 ounce of spices or bags that can hold 0.5 ounce?

Spice Emporium received a shipment of 41.92 pounds of curry powder. Lena stored half the curry powder in the basement. Then she separated the other half equally into 4 boxes.

B. How much curry powder did Lena put in each box?

A jar contained *p* ounces of paprika. Malik separated the paprika equally into packets. Each packet had 0.8 ounce of paprika.

C. Write an expression for the number of packets Malik filled with paprika. If the jar contained 116.8 ounces of paprika, how many packets did Malik prepare?

©Performance Task I The Business of Spices

Name	
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Spice Emporium has a mailing list of customers. The mailing list started with 7 customers four months ago. The number of customers has doubled each month. Malik needs to mail a letter to the customers on the list.



A. Write and evaluate an expression for the number of copies of the letter Malik will mail.

Today *n* customers each bought a 0.5-ounce packet of saffron. Half that number of customers bought 3-ounce packets of saffron.

B. Suppose 12 customers bought 0.5-ounce packets of saffron. Write an expression for the amount of saffron sold to these customers. Then find how much saffron was sold in all.

Spice Emporium has a sale on cinnamon and nutmeg. Twenty-six customers each bought a jar of cinnamon and a jar of nutmeg. Eight customers bought only jars of cinnamon. Lena wrote an expression for the number of jars of cinnamon sold (c), and the number of jars of nutmeg sold (n).

$$26(c + n) + (8 \times c)$$

C. Simplify her expression.

©Performance Task I A Typical Workday

Name_

Malik is mixing cayenne pepper, black pepper, and garlic powder. He puts 0.8 ounce of cayenne pepper and 0.7 ounce of black pepper in a bag. The bag can hold up to 2.2 ounces of spices.



A. Write an inequality for the amount of garlic powder (g) Malik can put in the bag. Can Malik put 0.8 ounce of garlic powder in the bag? Explain your reasoning.

Lena filled some jars with curry powder. She put 1.6 ounces of curry powder in each of the jars. She used a total of 20.8 ounces of curry powder.

B. Write and solve an equation for the number of jars Lena filled with curry powder.

Malik stocked some packages of sea salt on a shelf. Customers purchased 25 of the packages. At the end of the day, there were 8 packages still on the shelf.

C. Write and solve an equation for the number of packages of sea salt that Malik stocked on the shelf.