

# THE SEVEN HILLS SCHOOL

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## Summer Math Packet for Rising 6th Grade Students

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### **Directions:**

- Study “math facts”...addition, subtraction, multiplication, and division of whole numbers 0-12.
- PRINT THIS PACKET and complete all work in the packet.
- Show your work. Complete this math packet *without* the use of a calculator unless otherwise indicated.
- Turn this packet in during the first week of school.
- Enjoy your summer! We are looking forward to seeing you at the start of the new year.

## Seven Hills Summer Math Packet for Rising 6th Graders

**Name:**

Please **PRINT** your packet and show all work in the space provided or labeled neatly on separate paper. No calculator! You will need a **ruler** for this packet.

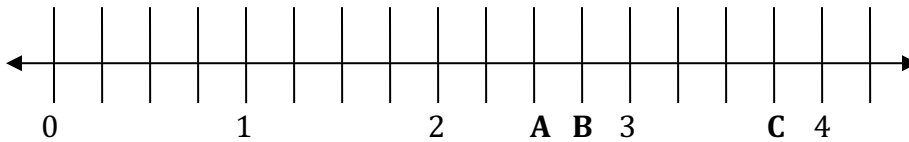
### Place Value

- 1) Sylvia works at a bakery. On Monday, she baked 388 cookies. On Tuesday, Sylvia baked 200 less cookies than on Monday. How many cookies did Sylvia bake on Tuesday?
  - a. 178
  - b. 288
  - c. 188
  - d. 88
  
- 2) Which of these numerals is equivalent to  $5000+400+2$ ?
  - a. 5420
  - b. 5402
  - c. 5,000,400,002
  - d. 5,400,002
  
- 3) Which means the same as 7500?
  - a. 75 hundreds
  - b. 75 ones
  - c. 75 tens
  - d. 75 thousands
  
- 4) Which sum has the value of 524?
  - a. 5 tens + 24 ones
  - b. 5 hundreds + 24 tens
  - c. 5 hundreds + 2 tens + 4 ones
  - d. 4 hundreds + 24 tens
  
- 5) Which sum has the value of 8943?
  - a. 8 thousands + 9 hundreds + 43 tens
  - b. 8 thousands + 94 tens + 3 ones
  - c. 7 thousands + 9 hundreds + 43 tens
  - d. 7 thousands + 19 hundreds + 43 tens

- 6) In which number does 5 have the least value?
- a. 5346
  - b. 582
  - c. 8532
  - d. 7852

**Pictorial Representation of Numbers**

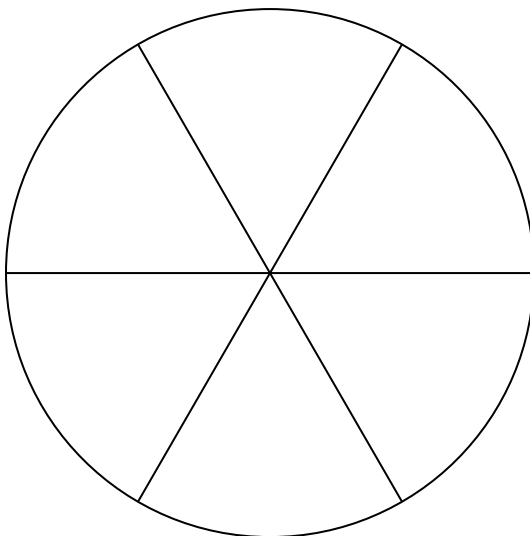
- 1) Which letter indicates  $2\frac{3}{4}$  on the number line?




- 2) Shade  $\frac{3}{4}$  of the rectangle.

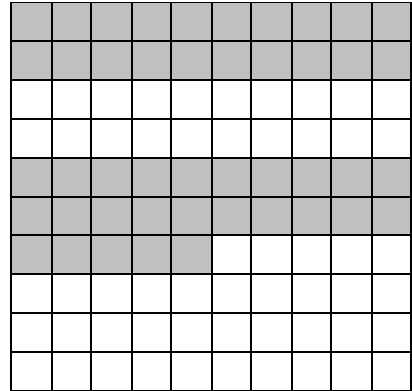
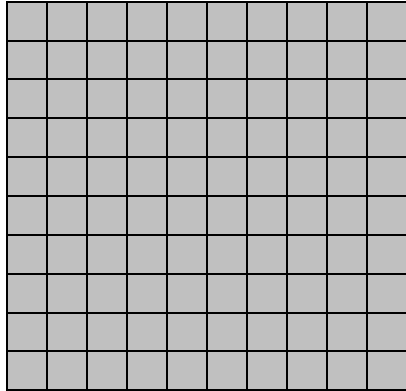


- 3) Shade  $\frac{2}{3}$  of the following circle.



4) What decimal number is represented by the shaded part?

 = 0.01



### Equivalent Decimals, Fractions, and Percents

- 1) Sarah competed in 9 out of 12 gymnastics meets. Which of the following is another way to describe this?
  - a. Sarah competed in  $\frac{1}{2}$  of the meets.
  - b. Sarah competed in  $\frac{3}{4}$  of the meets.
  - c. Sarah competed in  $\frac{2}{3}$  of the meets.
  - d. Sarah competed in  $\frac{1}{4}$  of the meets.
  
- 2) Which improper fraction is equivalent to  $2\frac{3}{4}$ ?
  - a.  $\frac{5}{4}$
  - b.  $\frac{14}{4}$
  - c.  $\frac{11}{4}$
  - d.  $\frac{9}{4}$

- 3) Barry baked 10 cookies of different shapes as shown below. What decimal number is equivalent to the percentage of heart-shaped cookies in the batch?



- a. 3
- b. 3.3
- c. 0.3
- d. 0.7

### **Rounding of Numbers**

- 1) The town of Springfield has 6873 cars. Round this number to the nearest tens.
  
  
  
  
  
  
  
  
  
  
- 2) There are 8951 people at the game. Round this number to the nearest thousand.
  
  
  
  
  
  
  
  
  
  
- 3) Jane buys 8.54 pounds of cat food. Round this weight to the nearest pound.

### **Models for Operations**

- 1) James packed 96 books in twelve boxes. He packed an equal number of books in each box. Which operation can be used to find the number of books in each box?
  - a) Subtract 12 from 96
  - b) Divide 96 by 12
  - c) Multiply 96 by 12
  - d) Add 96 and 12

## Computation with Whole Numbers and Decimals

1)  $73.4 + 38.27 =$

2) Solve:  $\$2.14 + \$0.80 + \$12.03 =$

3) Solve:  $\$32.28 - \$4.35 =$

- 4) Multiply  $\$20.00 \times 10$  by moving the decimal.
- a.  $\$20.00$
  - b.  $\$2.00$
  - c.  $\$2000.00$
  - d.  $\$200.00$

5) Solve  $363 \times 0.6 =$

6) Solve  $\$60.26 \div 23 =$

### Fraction Work

1) Write as an improper fraction:  $5\frac{3}{8}$

2) Write as an improper fraction:  $6\frac{11}{12}$

3) Write as a mixed number:  $\frac{109}{11}$

4) Write as a mixed number:  $\frac{37}{4}$

5) Solve. Write your answer as a mixed number:  $9\overline{)43}$

6) Solve. Write your answer as a mixed number:  $6\overline{)46}$

**Computation with Fractions**

1)  $\frac{1}{3} + \frac{5}{9} =$

2)  $3\frac{4}{7} + \frac{5}{8} =$

3)  $7\frac{2}{3} + 5\frac{1}{4} =$

4)  $4 - 2\frac{1}{2} =$

5)  $\frac{3}{5} - \frac{1}{7} =$

6)  $11\frac{1}{9} - 8\frac{5}{6} =$



## Word Problems

- 1) Three dozen doughnuts at the coffee shop costs \$19.80. Each doughnut costs the same amount. What is the cost of one doughnut?
  
  
  
  
  
  
  
  
  
  
- 2) A package of 15 computer flash drives costs \$47.25. If each flash drive costs the same amount, how much did each flash drive cost?
  
  
  
  
  
  
  
  
  
  
- 3) Jenn bought 3 shirts that cost \$12.95 each. She gave the clerk a \$50 bill to pay for the shirts. How much change should Jenn receive?

## Numerical Estimation Strategies

- 1) There were 3,823 people at the Westport Arts Festival on Saturday. On Sunday, 5,139 people attended. To get a good ESTIMATE of how many people attended altogether for both days, which expression would be best to use?
  - a.  $4,000 + 5,000$
  - b.  $3,000 + 5,000$
  - c.  $4,000 + 6,000$
  - d.  $3,000 + 6,000$

- 2) Alvin needs to multiply 28 by 33. Which of the following gives you the best estimate for Alvin to use?
- $30 \times 40$
  - $30 \times 30$
  - $25 \times 30$
  - $20 \times 20$
- 3) To estimate the product of 423 and 913, Joe multiplies  $400 \times 900$ . Is Joe's estimate GREATER than or LESS than the actual amount, and why?
- Greater, because he rounded both numbers up.
  - Greater, because he rounded both numbers down.
  - Less, because he rounded both numbers up.
  - Less, because he rounded both numbers down.
- 4) To ESTIMATE the sum of 521 and 613, John added 500 and 600. What is the difference between the estimate and actual answer?

### **Estimating Solutions to Problems**

- 1) David completed 100 questions on a test. His teacher said he did  $\frac{2}{3}$  of them correctly. Which best describes the number of questions he answered correctly?
- A little more than 30
  - More than 60
  - A little more than 50
  - A little less than 60

- 2) Mr. Jones ordered 18 pizzas for the class party. At the end of the party  $3\frac{1}{8}$  pizzas were left. Which describes the number of pizzas the class ate?
- A little more than 14
  - A little more than 15
  - A little less than 14
  - A little less than 15
- 3) Jane needs to add  $7\frac{1}{8} + 4\frac{3}{4}$ . To get a good estimate of this sum, which expression would be best for Jane to use?
- $7 + 4$
  - $7 + 5$
  - $71 + 44$
  - $8 + 4$
- 4) Mrs. Jones spent \$682 on groceries last month. This month she spent \$423 on groceries. ABOUT how much less did she spend on groceries this month than last month?
- \$200
  - \$100
  - \$300
  - \$1000
- 5) In June, Christy earned about \$18 for mowing lawns and \$29 for babysitting. ABOUT how much did she earn altogether?
- \$80
  - \$30
  - \$50
  - \$25

### Approximating Measures

1) If the shorter arrow is 3 inches long, approximately how long is the other arrow?

- a. 9 in.
- b. 4 in.
- c. 6 in
- d. 12 in.



2) A scale shows a weight of 10 grams. What object is most likely being weighed?

- a. Book
- b. Pencil
- c. Sandwich
- d. Carton of milk

### Customary and Metric Measurements

1) A football field is 100 YARDS long. How many FEET would you run if you ran exactly half way down the field?

2) The 18-wheel truck is 10 meters long. How long is the truck in centimeters?

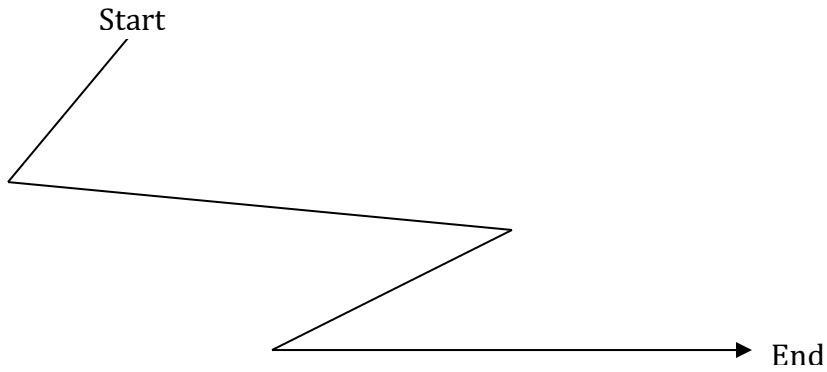
3) A basketball player is 209 cm tall. How tall is the player in meters?

4) Measure the length of the pen to the NEAREST centimeter.

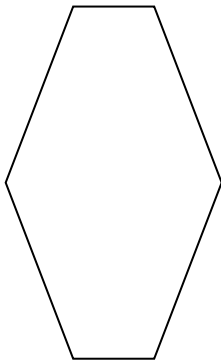


5) There is a funny path below. Each half-inch represents yards do you think are represented?

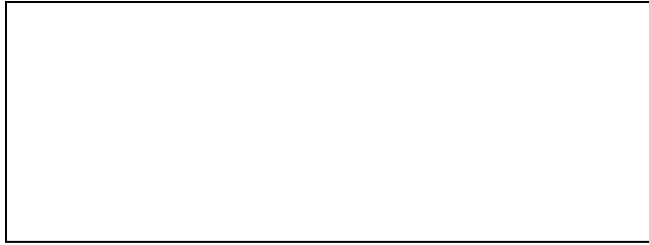
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6) Determine the PERIMETER of this figure to the nearest CENTIMETER. Please note that all side lengths are not the same.



- 7) Use your ruler to determine the area of the rectangle in square inches. Measure lengths to the nearest eighth of an inch.



- 8) The BEST unit to measure the area of a classroom rug would be:
- a. Kilometers<sup>2</sup>
  - b. Kilometers
  - c. Meters<sup>2</sup>
  - d. Meters
- 9) The BEST unit to measure the amount of water in a bathtub would be:
- a. Cups
  - b. Gallons
  - c. Tons
  - d. Quarts
- 10) The length of a floor in a gym is best measured in
- a. Centimeters
  - b. Liters
  - c. Kilometers
  - d. Meters

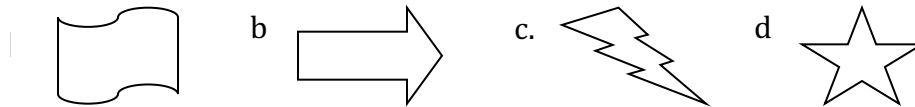
- 11) Sam needed to measure the weight of his father's truck. The BEST unit to measure this would be:
- a. Ounces
  - b. Tons
  - c. Grams
  - d. Pints

### Geometric Shapes and Properties

- 1) Which of the following shapes is NOT a quadrilateral?



- 2) Which of the following is NOT a polygon?



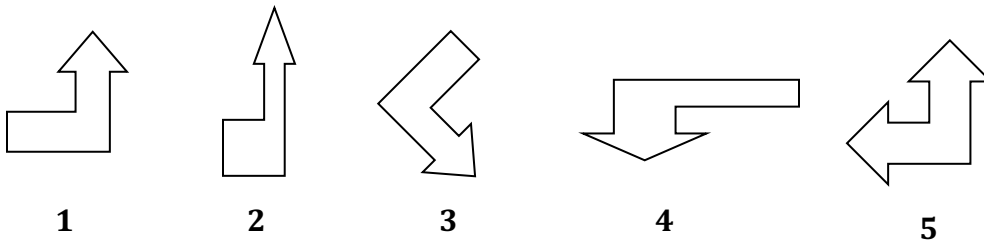
- 3) A rectangle with 4 equal sides is a \_\_\_\_\_.

- 4) In the space below, draw a parallelogram. Explain why the figure you drew is a parallelogram.

5) In the space below, draw a hexagon. Explain why the figure you drew is a hexagon.

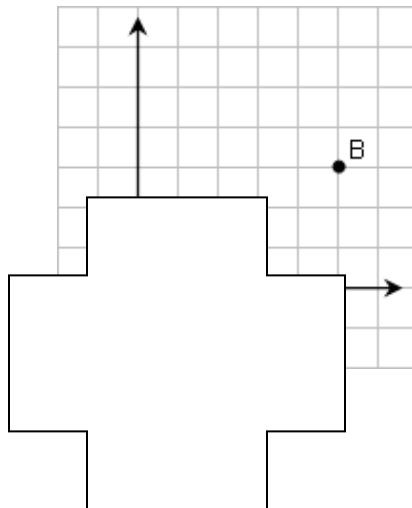
### Spatial Relationships

1) Which two figures are congruent?



- a. 1 and 5
- b. 2 and 3
- c. 1 and 3
- d. 2 and 4

2) How many lines of symmetry does the following shape have? Draw them on the figure.



3) What is the location of point **B**?



- a. (3, 5)      c. (5,4)
- b. (4, 5)      d. (5,3)

**Tables, Graphs and Charts**

- 1) Ira is comparing the number of small business franchises. Draw and label a BAR graph that shows the number of each franchise shown in the table below.

Number of Franchises 1990	
McDonald's	7919
Jazzercise	4407
Dairy Queen	5214
7-Eleven	3010

- 2) Use the table to answer the following question.

Teacher	Number of Cans Collected in His/Her Class
Mr. Smith	652
Mr. Gomez	507
Ms. Castro	553
Ms. Powell	605

What percent of the classes collected more than 550 cans?

- a. 10%
- b. 25%

- c. 50%
- d. 75%

3) Use the table to answer the following question.

**Number of Students Who Bring a Packed Lunch to School**

Days of the week	# of students
Monday	120
Tuesday	90
Wednesday	100
Thursday	109
Friday	70

During how many days did 100 or more students bring their lunch?

- a. 2
- b. 3
- c. 4
- d. 5

**Statistics and Data Analysis**

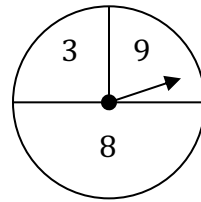
1) Use the data from the table below to answer the following questions.

**World Rivers**

Rivers	Length in Miles
Uruguay	1,000
Bramaputra	1,800
Euphrates	2,235
Gambia	700
Salween	1,500

- a. For a Social Studies project, Rita made a table that shows the length of several rivers in the world. She states Gambia River is about four times the length of the Euphrates River. Is Rita correct? Explain.
- b. According to Rita's chart which river is about twice the length of the Gambia River? Explain.

### Probability and Combinations



- 1) Kelly and Anna take turns spinning the above spinner. Kelly gets a point if the arrow lands on an even number. Anna gets a point if the arrow lands on an odd number. Is this game fair?
- No, because there are more odd numbers than even numbers.
  - No, because the outcomes are not equally likely.
  - Yes, because the half of the circle has odd numbers and half has an even number.
  - Yes, because there are 3 choices.
- 2) An ice cream sundae shop offers a choice of chocolate, vanilla, or strawberry ice cream, chocolate or caramel syrup, and nuts or no nuts on top. How many different types of sundaes can they make?

### Patterns

1) Find the next two numbers in the sequence.

$$1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \text{————}, \text{————}$$

2) Find the next two numbers in the sequence.

$$3, 6, 12, 24, 48, \text{————}, \text{————}$$

### Algebraic Concepts

1) What is the value of  $x$  in the equation  $38 + x = 99$

- a. 51
- b. 61
- c. 71
- d. 137

2) Identify the solution of  $84 \div r = 12$ .

### Mathematical Applications

- 1) Brent wants to earn \$200 to buy a new skateboard. He can earn money by mowing lawns. Brent can earn \$10 for each lawn he mows. He can mow at most 4 lawns per week.

How many weeks must Brent mow lawns to buy the skateboard?

- 2) A soup can display has 66 cans. There is one less can in each row than in the row below, with a single can in the top row (forming a pyramid). How many cans are in the bottom row?

- 3) Suppose a relative matches your age with dollars each birthday. You are 13. How much money have you been given over the years by this relative?

- 4) The Lewis Middle School Band is planning a bus trip to a band competition. There are 138 members in the band and each bus will hold 32 people. How many buses are needed for the trip?

2 math websites I tried this summer:

1)

2)

**Answer Key**

**Place Value**

1) C

2) B

3) A

4) C

5) B

6) D

**Pictorial Representation of Numbers**

- 1) B
- 2) Many possibilities. 9 of 12 smaller rectangles should be shaded.
- 3) Several possibilities. 4 of 6 sections should be shaded.
- 4) 1.45

**Equivalent Decimals, Fractions, and Percents**

- 1) B
- 2) C
- 3) C

**Rounding of Numbers**

- 1) 6870
- 2) 9000
- 3) 9

**Models for Operations**

- 1) B

**Computation with Whole Numbers and Decimals**

- 1) 111.67
- 2) \$14.97
- 3) \$27.93
- 4) D
- 5) 217.8
- 6) \$2.62

**Fraction Work**

- 1)  $\frac{43}{8}$
- 2)  $\frac{83}{12}$
- 3)  $9\frac{10}{11}$
- 4)  $9\frac{1}{4}$
- 5)  $4\frac{7}{9}$
- 6)  $7\frac{2}{3}$

**Computations with Fractions**

- 1)  $\frac{8}{9}$
- 2)  $4\frac{11}{56}$
- 3)  $12\frac{11}{12}$
- 4)  $1\frac{1}{2}$
- 5)  $\frac{7}{20}$
- 6)  $2\frac{5}{18}$

**Word Problems**

- 1) \$0.55 or 55¢
- 2) \$3.15
- 3) \$11.15

**Numerical Estimation Strategies**

- 1) A
- 2) B
- 3) D
- 4) 34

**Estimating Solutions to Problems**

- 1) B
- 2) D
- 3) B
- 4) C
- 5) C

**Approximating Measures**

- 1) C
- 2) B

**Customary and Metric Measurements**

- 1) 150 ft
- 2) 1,000 cm
- 3) 2.09 m
- 4) 9 cm
- 5) Answers will vary, depending on technique. Should be approximately 32 yards.
- 6) 12 cm
- 7)  $4\frac{7}{32}$  sq in.
- 8) C
- 9) B
- 10) D
- 11) B

**Geometric Shapes and Properties**

- 1) D
- 2) A
- 3) Square
- 4) Drawings will vary. The shape should be 4-sided with 2 pairs of parallel sides.
- 5) Drawings will vary. The shape should have 6 sides.

**Spatial Relationships**

- 1) C
- 2) 4
- 3) D

**Tables, Graphs, and Charts**

- 1) Graphs will vary. Makes sure the graph is labeled, has mathematically consistent number increments, a title, etc.
- 2) D
- 3) B

**Statistics and Data Analysis**

- 1) a) No. The Euphrates River is approximately 3 times the length of the Gambia River.
- b) The Salween River.  $1500/700$  is somewhat more than 2.

**Probability and Combinations**

- 1) C
- 2) 12

**Patterns**

- 1)  $1/32, 1/64$
- 2) 96, 192

**Algebraic Concepts**

- 1) B
- 2) 7

**Mathematical Applications**

- 1) 5
- 2) 11
- 3) 91
- 4) 5

Adapted from  
[bms.westport.k12.ct.us/BMSWebsite/mathcmt.htm](https://bms.westport.k12.ct.us/BMSWebsite/mathcmt.htm)

Revised 8/2018