

Dear Parents,

As the summer dawns upon us, we have the time to reflect on the year that was and prepare for the year to come. One of the effects of the summer is the diminished math skills. In an attempt to overcome the obvious, we are assigning math work over the summer months to curb the deterioration of these skills. Math is a subject that is scaffolded- the topics repeat from year to year albeit with a little bit more of a challenge. We feel that these sheets will help our students as they begin the new year, with the new challenges.

The summer work is divided into 20-25 sections based on the New York State Standards of Mathematics. There are approximately three to five questions per topic. It is our expectation that all students entering 7<sup>th</sup> and 8<sup>th</sup> grade complete all the problems before the school year. Ideally, each student should do two or three topics a week. In addition to the regular worksheets, students who were in 7<sup>th</sup> grade high math and/or wish to take math 9 –integrated algebra regents in 8<sup>th</sup> grade, are strongly encouraged to complete the “7<sup>th</sup> Grade Advanced Worksheet.” Should your child struggle with any of the material, there are many websites that your child can go to, both videos and extra worksheets, for assistance. One website in particular we have found helpful is [khanacademy.org](http://khanacademy.org).

It is our hope and anticipation that our students reach higher levels in mathematical ability and mathematical thinking. It is our goal to have students reach their full capabilities as learners and as bnei and bnos Torah.

Please feel free to contact us over the next few weeks to discuss your child’s math placement. We are available, as well, to discuss strategies to ensure your child enters school next year well prepared.

Have a great summer and hatzlacha rabba!

Rabbi Jeremy Feder

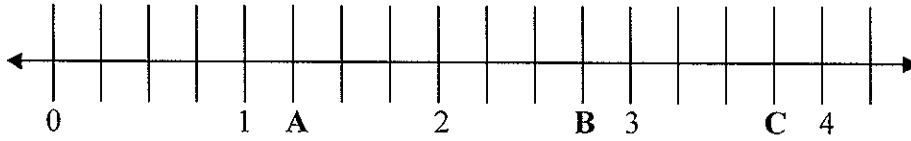
Director of Mathematics

**Math Summer Review for Grade 7****NUMBER SENSE****Strand 1 - Place Value**

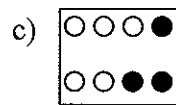
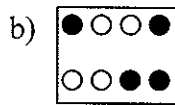
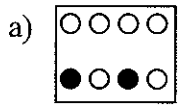
- 1) In the 1988 Presidential election, 676,584 Connecticut voters for Dukakis and 750,241 voted for Bush. How many more people voted for Bush?
  - a. 1,426,825
  - b. 173,657
  - c. 84,767
  - d. 73,657
  
- 2) In 1998 there was 179.63 million tons of garbage generated. What is this number rounded to the NEAREST tenth?
  - a. 179.6
  - b. 179.7
  - c. 180.0
  - d. 200
  
- 3) Janie's temperature was 101.2 when she went to the doctor. This is
  - a. a little less than 102
  - b. a little more than 102
  - c. a little less than 101
  - d. a little more than 101
  
- 4) Which means the same as  $60000 + 8000 + 900 + 7$ ?
  - a. 6,080,907
  - b. 680,907
  - c. 68,901
  - d. 6,897
  
- 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. 9532
  - b. 5932
  - c. 3925
  - d. 2352

**Strand 2 – Pictorial Representation of Numbers**

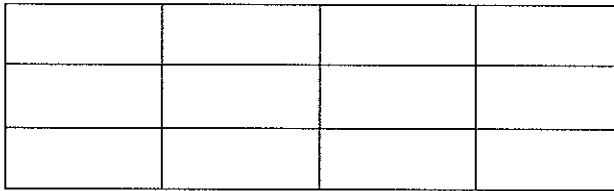
1) Which letter indicates  $1 \frac{1}{4}$  on the number line?



2) Which of the following shows  $\frac{1}{2}$ ?

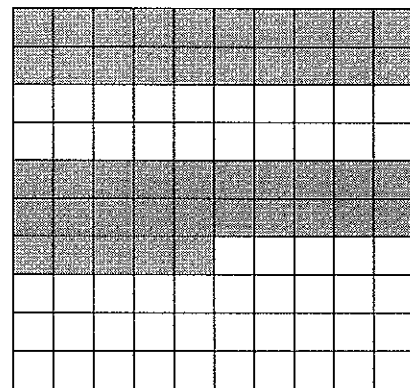
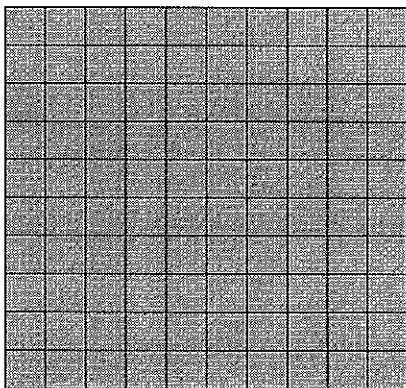


3) Shade one-third of the rectangle.

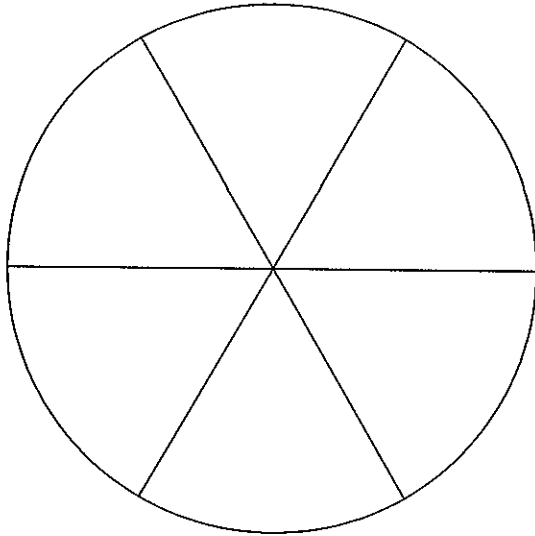


4) What decimal number is represented by the shaded part?

$\square = 0.01$



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



**Strand 3 – Equivalent Fractions, Decimals and Percents**

- 1) What is another way of writing  $\frac{5}{3}$ ?
- a. 1 and  $\frac{2}{10}$
  - b.  $1\frac{1}{4}$
  - c. 1 and  $\frac{3}{6}$
  - d. 1 and  $\frac{2}{3}$
- 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) Jessica baked 10 cookies of different shapes. What decimal number represents the number of star shaped cookies?



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

**Strand 4 - Order, Magnitude and Rounding of Numbers**

- 1) In 1991, baseball player Julio Franco of the Texas Rangers was the American League Batting Champion. His batting average was between 0.315 and 0.360. Which of these numbers could have been his batting average?
- a. 0.305
  - b. 0.314
  - c. 0.341
  - d. 0.365

- 2) The table shows grade averages in science for four students.

Name	Average
Zach	83.24
Pete	83.14
Emma	83.42
Cathy	83.16

Who has the highest grade average?

- a. Zach
  - b. Pete
  - c. Emma
  - d. Cathy
- 3) The ticket outlet sold between 13,300 and 15,700 tickets during the first day of ticket sales for a concert. Which of these numbers could have been the actual number of tickets sold?
- a. 13,120
  - b. 13,300
  - c. 14,733
  - d. 15,877
- 4) A recipe calls for  $2\frac{3}{4}$  cups of flour,  $2\frac{1}{8}$  cups of sugar,  $2\frac{1}{4}$  of brown sugar and  $2\frac{1}{2}$  cups of shortening. The LEAST amount of which ingredient is used?
- a. Flour
  - b. Sugar
  - c. Brown Sugar
  - d. Shortening
- 5) Paula jogged for 5 days this week. She ran  $\frac{1}{6}$  mile,  $\frac{9}{10}$  mile,  $\frac{3}{4}$  mile, and  $\frac{2}{5}$  mile. What is the LONGEST distance ran?
- a.  $\frac{1}{6}$  mile
  - b.  $\frac{2}{5}$  mile
  - c.  $\frac{3}{4}$  mile
  - d.  $\frac{9}{10}$  mile

- 6) Yesterday Mr. Reyes put 18.29 gallons of gas in the car. What is this amount rounded to the NEAREST GALLON?
- 7) Jamie buys 9.245 pounds of cookies. Round this weight to the nearest hundredth.

## OPERATIONS

### Strand 5 - Models for Operations

- 1) A basketball player scores an average of 18 points per game. Which number sentence should be used to determine ABOUT how many points she scores in 8 games?
- a)  $18 + 8 =$
  - b)  $18 - 8 =$
  - c)  $18 \times 8 =$
  - d)  $18 \div 8 =$
- 2) Barney drove 455 miles on Monday and 389 miles on Tuesday. Which number sentence should Barney use to find how many MORE miles he drive on Monday?
- a.)  $455 \div 2 =$
  - b.)  $(455 + 389) \div 2$
  - c.)  $455 + 389$
  - d.)  $455 - 389$

- 3) Write a story problem that can be solved using the number sentence  $\$21.95 \times 3 =$

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- 4) On the lines below write a story problem that can be solved by using the number sentence  $\$22.50 \div 5 = \square$

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### Strand 6 - Basic Facts

- 1)  $72 \div 9 =$

- a. 9
- b. 6
- c. 7
- d. 8

2)  $7 \times 6 =$

- a. 36
- b. 49
- c. 42
- d. 48

3)  $7 \times 8 =$

4)  $24 \div 6 =$

### **Strand 7 - Computation with Whole Numbers and Decimals**

- 1) Jason needs to read 164 pages in his library book. He has already read 85 pages. How many pages does Jason have left to read?
- 2) A 16-ounce bottle of Happy Ranch salad dressing costs \$3.39. Another brand sells for \$0.30 more per bottle. What is the price of the other brand of salad dressing?
  - a. \$0.21
  - b. \$0.22
  - c. \$1.69
  - d. \$3.59
- 3) A roll of film that takes 36 pictures costs \$3.59. A photographer used 7 rolls. How many pictures did she take?
  - a. 9
  - b. 25.13
  - c. 63
  - d. 252
- 4) Solve  $0.98 \div 7$ 
  - a. 0.14
  - b. 1.4
  - c. 14.0
  - d. 140
- 5) Solve  $125.3 \times 3$ 
  - a. 0.3759
  - b. 3.759

- c. 37.59
- d. 375.9

**Strand 8 - Computation with Fractions**

1)  $\frac{5}{8} - \frac{3}{8} =$

2)  $\frac{3}{6} + \frac{2}{6} =$

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

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

5)  $698 \div 100 =$

- a. 0.698
- b. 6.98
- c. 69.8
- d. 69800

6)  $3.49 \div 10 =$

- a. 0.349
- b. 349
- c. 34.9
- d. 3490

7)  $0.495 \times 10 =$

- a. 4950
- b. 495
- c. 49.5
- d. 4.95

**Strand 9 - Solve Word Problems**

- 1) One dozen donuts at the coffee shop costs \$3.60. Each donut cost the same amount. What is the cost of one donut?

- 2) A package of 15 computer disks costs \$47.25. If each disk costs the same amount, how much did each disk 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?

**ESTIMATION AND APPROXIMATION**  
**Strand 10 - 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. To get a GOOD ESTIMATE of this difference which expression would be best for Alvin to use?
  - a.  $30 \times 40$
  - b.  $30 \times 30$
  - c.  $25 \times 30$
  - d.  $20 \times 20$
- 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?
  - a. Greater, because he rounded both numbers up.
  - b. Greater, because he rounded both numbers down.
  - c. Less, because he rounded both numbers up.
  - d. Less, because he rounded both numbers down.
- 4) To ESTIMATE the product of 521 and 613, John multiplied  $500 \times 600$ . Will John's estimate be MORE or LESS than the actual sum?
  - a. More, because he rounded both numbers up.
  - b. More because he rounded both numbers down.
  - c. Less, because he rounded both numbers up.
  - d. Less, because he rounded both numbers down.

- 5) Josh is helping count supplies for the school picnic. He wants to ESTIMATE the number of hamburgers in 12 cases. Each case holds 24 packages. Each package has 8 hamburgers. What would be a GOOD ESTIMATE of the number of hamburgers?

Answer: \_\_\_\_\_

Explain how you made your estimate.

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### Strand 11 - Estimating Solutions to Problems

- 1) Dylan wants to divide 1304 by 18. To get a GOOD ESTIMATE of this quotient, which expression would be BEST for Dylan to use?
- $1300 \div 20$
  - $1300 \div 200$
  - $2000 \div 15$
  - $1500 \div 10$
- 2) Ruth wants to multiply 176 by 82. To get a GOOD ESTIMATE of this product, which expression would be BEST for Ruth to use?
- $176 \times 200$
  - $175 \times 2$
  - $80 \times 2$
  - $200 \times 80$
- 3) Jim wants to subtract 238 from 743. To get a GOOD ESTIMATE of this difference, which expression would be BEST for Jim to use?
- $700 + 200$
  - $1000 - 230$
  - $700 - 200$
  - $800 - 250$
- 4) Jill wants to add 817 and 1236. To get a GOOD ESTIMATE of this sum, which expression would be BEST for Jill to use?
- $900 + 1200$
  - $900 + 1300$
  - $800 + 1200$
  - $800 + 1000$
- 5) In June, Christy earned about \$18 for mowing lawns and \$29 for babysitting. ABOUT how much did she earn altogether?
- \$80

- b. \$30
- c. \$50
- d. \$25

## **RATIO, PROPORTION AND PERCENT**

### **Strand 12 – Ratios and Proportions**

- 1) A recipe for bread calls for 2 cups of flour for every 3 eggs. Using this ratio, which of the following combinations could be used to make the recipe?
  - a. 4 cups of flour, 5 eggs
  - b. 5 cups of flour, 7 eggs
  - c. 5 cups of flour, 8 eggs
  - d. 6 cups of flour, 9 eggs
  
- 2) Denise sewed 8 dresses in 15 days. At this rate, how many days would it take her to sew 32 dresses?
  - a. 60
  - b. 45
  - c. 39
  - d. 30

## **RATIO, PROPORTION AND PERCENT**

### **Strand 13 – Computation with Percents**

- 1) Dave has completed 32 out of 40 projects he was assigned by his boss? What percent of the projects has he completed?
  
- 2) The local clothing store is having a 25% off sale. How much would a pair of pants that normally sell for \$38.75 cost after the discount? Round your answer to the NEAREST cent.

## **MEASUREMENT**

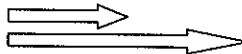
### **Strand 14 - Time**

- 1) A soccer game started at 1:35 PM and ended at 3:20 PM. The Panthers scored twice as many points as the Cougars. How long was the game?
  - a. 1 hour 20 minutes
  - b. 1 hour 25 minutes

- c. 1 hour 45 minutes
  - d. 2 hours
- 2) The movie started at 2:30 p.m. and ended at 4:20 p.m. How long was the movie?
- 3) Amy's history class begins at 8:30 and ends at 9:15. How long is the class?
- 4) Tiffany left her home for the mall at 11:15 A.M and returned home at 2:45 P.M. How long was she gone?
- 5) Sara's mom jogs 25 minutes each day except on Saturday and Sunday. How much time does she spend running in a week?

**Strand 15 - Approximating Measures**

- 1) If the shorter arrow is 3 inches long, ABOUT how long is the other arrow?
- a. 9 in.
  - b. 4 in.
  - c. 6 in.
  - d. 12 in.

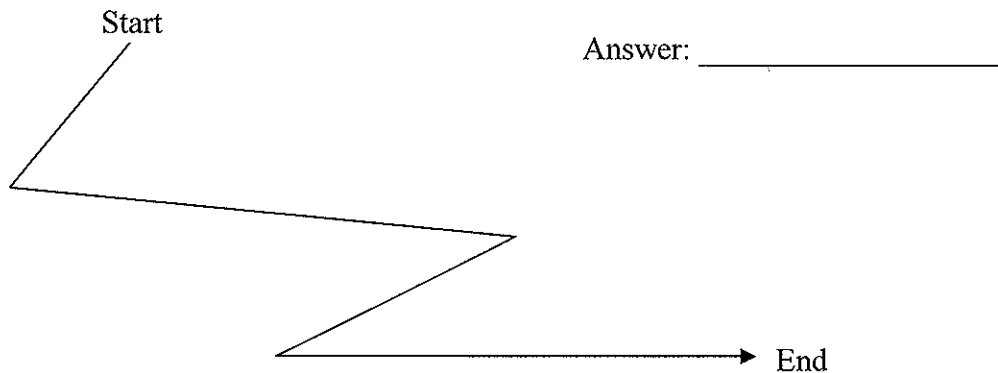


- 2) A scale shows a weight of 10 grams. What object is most likely being weighed?
- a. Book
  - b. Pencil
  - c. Sandwich
  - d. Carton of milk

**Strand 16 - Customary and Metric Measurements**

- 1) The amount of juice Bill drank for breakfast would BEST be measured in
- a. Cups
  - b. Gallons

- c. Teaspoons
  - d. Pounds
- 2) The length of a swimming pool would BEST be measured in
- a. Centimeters
  - b. Meters
  - c. Millimeters
  - d. Kilometers
- 3) Nathan's yard is 120 feet long and 53 feet wide. What is the perimeter of his yard?
- a. 346 ft.
  - b. 240 ft.
  - c. 173 ft.
  - d. 106 ft.
- 4) Andrea is carpeting her bedroom. The length of the room is 9 feet and the width is 7 feet. How many square feet of carpeting will she need?
- a. 16
  - b. 56
  - c. 63
  - d. 72
- 5) There is a funny path below. Each half-inch is worth two yards. How many yards do you think it is worth?



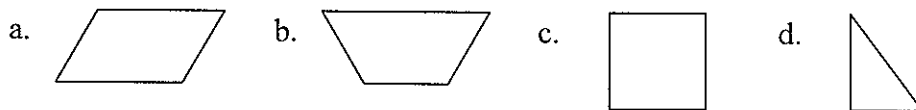
- 6) A basketball court is 94 feet long. How many inches long is a basketball court?
- a. 106
  - b. 188
  - c. 282
  - d. 1128
- 7) Dariah lives 3.92 kilometers away from Marianne. Each girl walks half the distance to meet. ABOUT how far does each girl walk?
- a. 0.02 km

- b. 0.2 km
- c. 2 km
- d. 20 km

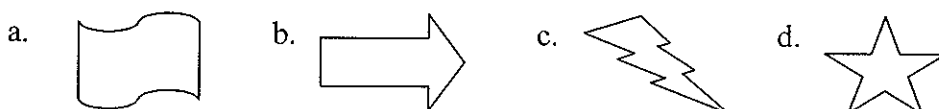
- 8) A package that Sonya mailed weighed 3 pounds. How much LESS than 50 ounces is that?
- a. 1 oz
  - b. 2 oz
  - c. 10 oz
  - d. 46 oz
- 9) Maria needs 6 pieces of lace that are 6 inches long for the dress she is making. How many yards is this?
- a.  $\frac{1}{2}$
  - b. 1
  - c. 2
  - d. 3
- 10) The length of a floor in a gym is best measured in
- a. Centimeters
  - b. Liters
  - c. Kilometers
  - d. Meters
- 11) The amount of liquid in an eyedropper would BEST be measured in:
- a. Milliliters
  - b. Centiliters
  - c. Liters
  - d. Kiloliters

**SPATIAL RELATIONSHIPS AND GEOMETRY**  
**Strand 17 - Geometric Shapes and Properties**

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



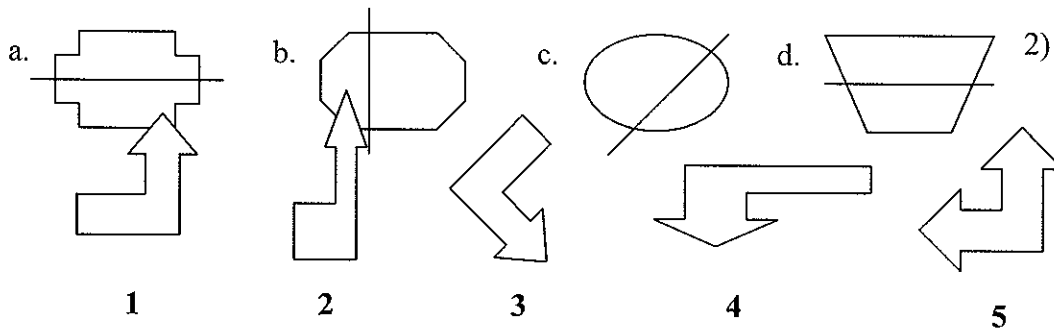
- 2) Which of the following is NOT a polygon?



- 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.

### Strand 18 - Spatial Relationships

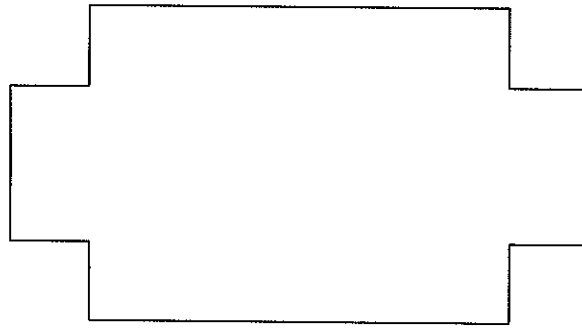
- 1) Which of the following shapes is showing a line of symmetry?



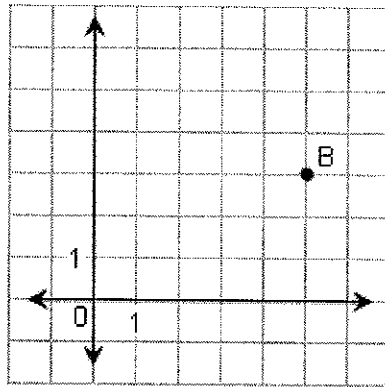
Which two figu

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

- 3) Many letters in the alphabet have lines of symmetry. In which pair of letters below does each letter have at least 2 lines of symmetry?
  - a. D and I
  - b. C and H
  - c. A and E
  - d. H and X
- 4) Draw all lines of symmetry in the figure.



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



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

**PROBABILITY AND STATISTICS**

**Strand 19 - 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.

Class	Number of Cans Collected
Mr. Smith	652
Mr. Gomez	507
Ms. Castro	553
Ms. Powell	605

How many classes collected more than 500 cans?

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

- 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 brought their lunch?

- a. 2
  - b. 3
  - c. 4
  - d. 5
- 4) Use the data from the table below to draw and label a bar graph.

Favorite animal	# of people polled
elephant	55
tiger	30
hippo	70
wolf	60
hyena	5

- 5) Jefferson Middle School conducted a newspaper collection drive. **Create a pictograph** and answer the following questions.



= 10 kilogram (kg) of newspapers

Monday = 20 kg  
Tuesday = 45 kg  
Wednesday = 45 kg  
Thursday = 50 kg  
Friday = 55 kg

- a. On which day most newspaper was collected?
  
  
  
  
  
  
  
  
  
  
- b. On which two day the most newspaper was collected?

## Strand 20 - Statistics and Data Analysis

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

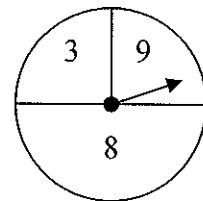
**World Rivers**

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.

## Strand 21 - Probability

- 1) Kelly and Anna take turns spinning a 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?
- a. No, because there are more odd numbers than even numbers.
- b. No, because the outcomes are not equally likely.
- c. Yes, because the half of the circle has odd numbers and half has an even number.
- d. Yes, because there are 3 choices.
- 2) Ellison is playing a word game with 26 tiles lettered a, b, c . . . . z. What is the probability that Ellison will select a vowel (a, e, i, o, u)?
- 3) Sam is playing a game with 8 number tiles marked 0, 22, 4, 6, 8, 10, 12 and 14. If he draws one tile, what is the probability that the number will be LESS than 10?
- a.  $\frac{3}{8}$
- b.  $\frac{1}{2}$
- c.  $\frac{5}{8}$
- d.  $\frac{7}{8}$



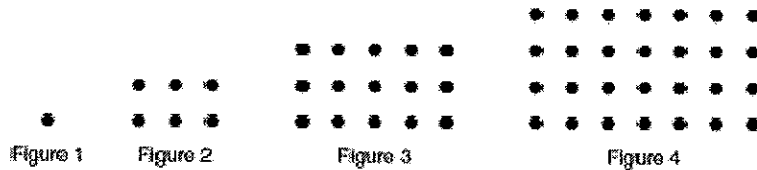
## PATTERNS

### Strand 22 - Patterns

- 1) What symbol should replace the question mark in the pattern below?

▲ ▲ ♣ ♣ ♣ ♦ ■ ▲ ? ♣ ♣ ♣ ♦ ■

- 2) How many dots would be in Figure 5?



- 3) Find the next two numbers in the sequence.

24, 26, 28, 30, 32, \_\_\_\_, \_\_\_\_

- 4) What is the next number in this pattern?

240, 120, 60, 30, \_\_\_\_\_

- a. 5
- b. 10
- c. 15
- d. 20

## ALGEBRA AND FUNCTIONS

### Strand 23 - Algebraic Concepts

- 1) What is the value of  $\hat{1}$  in this equation?

$$38 + \hat{1} = 99$$

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

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

## DISCRETE MATHEMATICS

### Strand 24 - Classification and Logical Reasoning

- 1) Grant School sold magazine subscriptions to raise money. Anna sold more than Katie and Greg. Belinda sold more than Anna. Who sold the MOST subscriptions?
- a. Anna
  - b. Katie
  - c. Greg
  - d. Belinda

- 2) Marvin arrived at school before Doug and Paul. Bob arrived after Paul and Marvin. Who arrived at school FIRST?
- Marvin
  - Doug
  - Bob
  - Paul
- 3) Four children were running a race. Sam finished before Adam, but after Teri, Mary finished after Sam, but before Adam. Who won the race?
- Sam
  - Adam
  - Teri
  - Mary
- 4) Four friends went out to eat. One ate ham, one ate turkey, one ate beef, and the fourth ate chicken. Dawn ate turkey, Scott never eats ham, Faith ate beef. What did Jack eat?
- Ham
  - Turkey
  - Beef
  - Chicken

## **MATHEMATICAL APPLICATIONS**

### **Strand 25 - Mathematical Applications**

- 1) Roberta had \$43 saved. After her bicycle was damaged, she had to have it repaired. What other information is needed to find the percentage of her savings she spent on repairs?
- The cost of the repairs
  - The amount in her savings account last month
  - The cost of the bicycle
  - How long the repairs took
- 2) Ellen started with a full tank of gas and drove 309 miles before she stopped for gas. She filled the tank with 10.5 gallons of gas that cost \$1.36 per gallon. How much did she pay for gas?
- \$13.50
  - \$14.28
  - \$32.45
  - \$42.02
- 3) A road crew can lay  $2\frac{1}{2}$  miles of new road surface each day. What other information is needed to find the number of days it will take to finish the highway?
- The number of people in the crew
  - What the weather is like
  - The number of hours per day they worked
  - The number of miles of highway that remain to be completed

- 4) The soccer team went out for pizza after the game. They ordered pizzas for \$12 each and soft drinks for \$1.25 each. What other information is needed to find the total amount the team spent?
- The number of pizzas and drinks bought
  - The number of players on the team
  - The number of drinks they ordered
  - The number of coupons they had
- 5) Jenna's class is leaving on a field trip at 8:30 a.m. The cost is \$3.59 for each student. How much will it cost for 27 students to go on the trip?