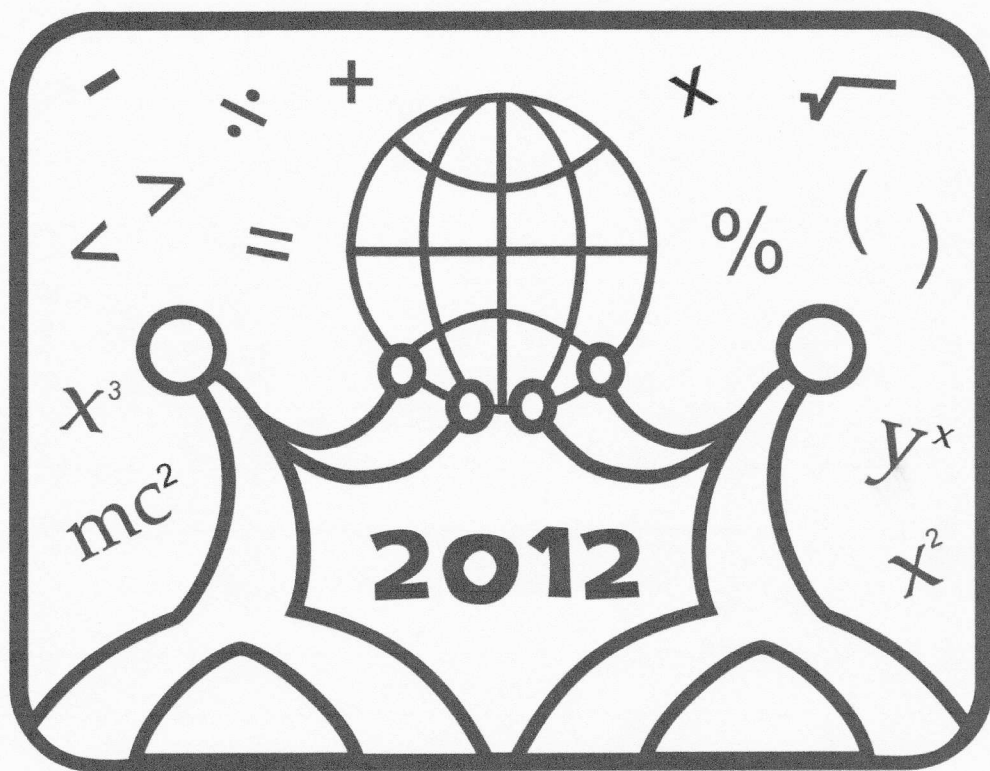


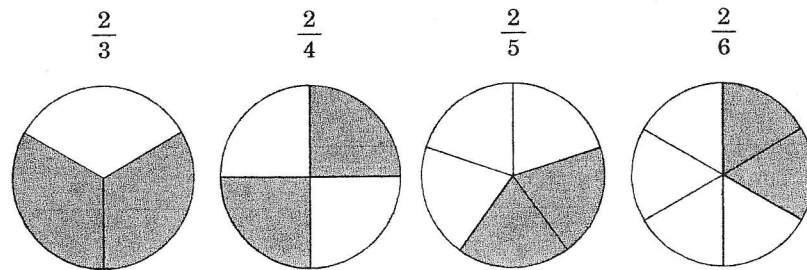
School Name _____

MATHLETES CHALLENGE



Round 2 (1st Half)

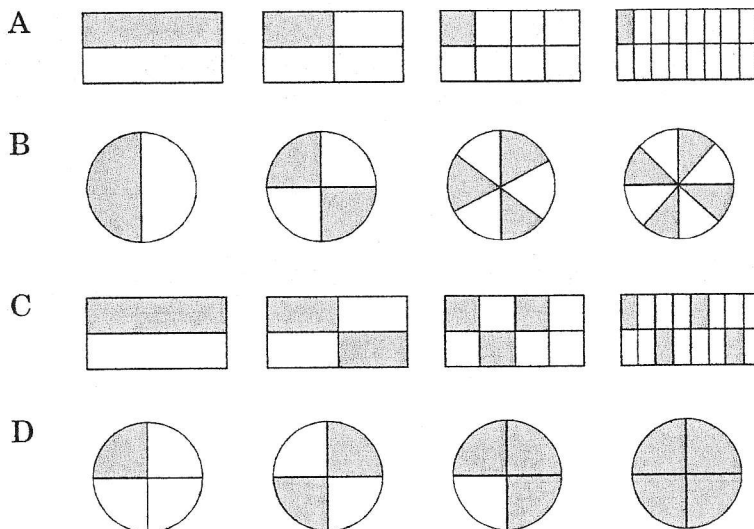
1. Shari studied these pictures of fractions.



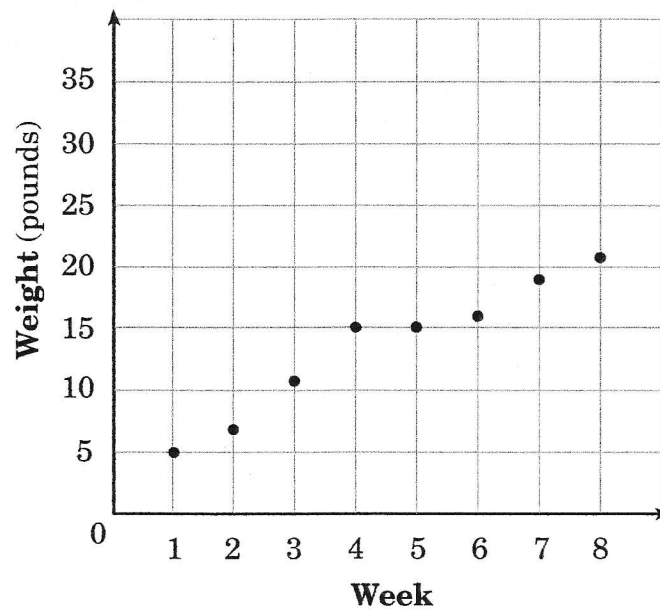
What pattern might she correctly notice in the fractions?

- A Increasing the denominator increases the value of the fraction.
- B If the denominator stays the same and the numerator increases, the fraction names a smaller amount.
- C Increasing the denominator by 2 cuts the size of the fraction in half.
- D If the numerator stays the same and the denominator increases, the fraction names a smaller amount.

2. Each graph represents a fraction. In which set of graphs do the numerators remain the same?



3. Suzie weighed her new puppy once a week for two months and charted his growth on a graph.



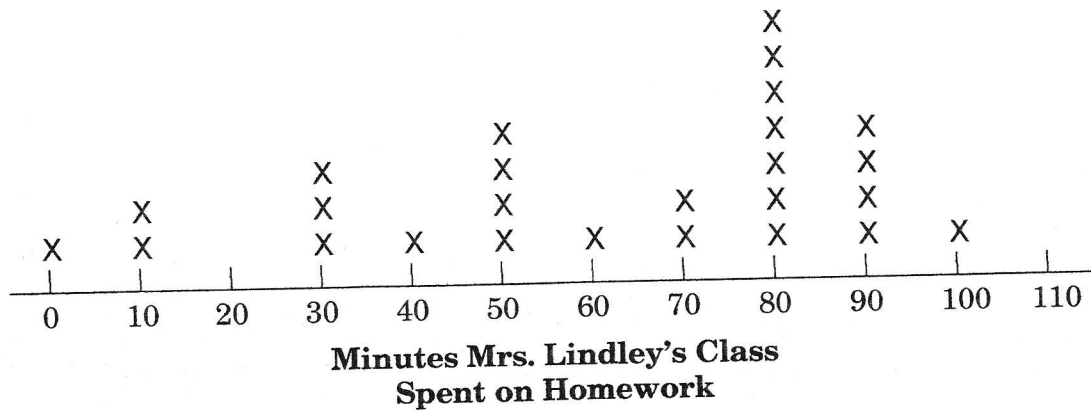
Which statement is true about her puppy's weight changes?

- A For Weeks 1–8, it gained about 2 pounds per week.
- B Between Week 5 and Week 6, it gained 4 pounds.
- C Its weight increased every week.
- D It gained 20 pounds over the two-month period.

4. Aubrey kept a journal to determine what part of her day was spent at school, watching TV, sleeping, and doing other activities. Which type of graph would **best** display and compare this information?

A bar graph
B pictograph
C line graph
D circle graph

5. The fifth-grade students in Mrs. Lindley's class made a line plot that showed the total amount of time they spent on homework for one night.



Based on the line plot, which statement is true?

- A The range of the data is one hour and twenty minutes.
B The mode of the data is one hour and twenty minutes.
C The mean of the data is one hour and twenty minutes.
D The median of the data is one hour.

6. Based on the table, which of the following statements is true?

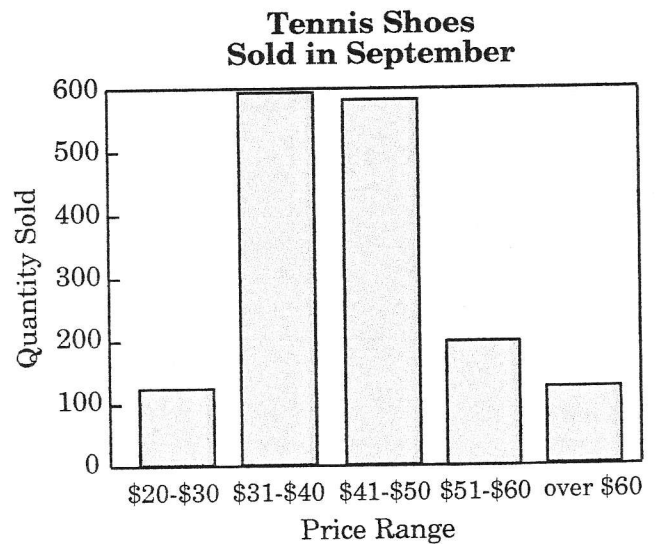
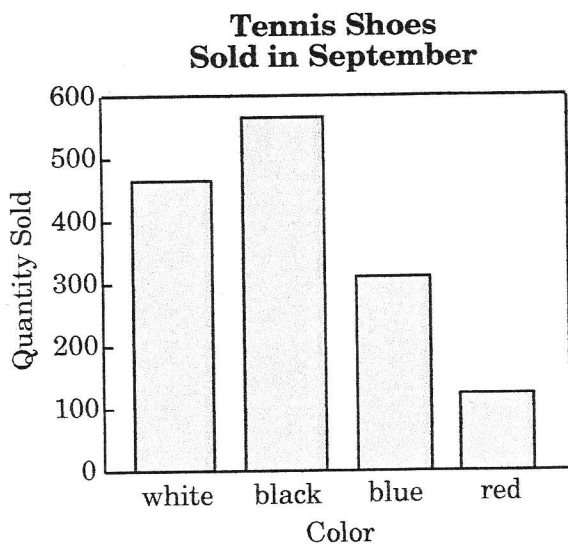
North Carolina Population Density

County	Population	Area (in sq mi)	Population Density
Alamance	119,397	431	277.023
Brunswick	68,416	855	80.019
Cabarrus	120,057	365	329.827
Dare	28,952	382	75.791
Edgecombe	55,199	505	109.305

- A The county with the largest area has the highest density.
- B The county with the largest area has the lowest density.
- C The county with the smallest area has the highest density.
- D The county with the smallest area has the lowest density.

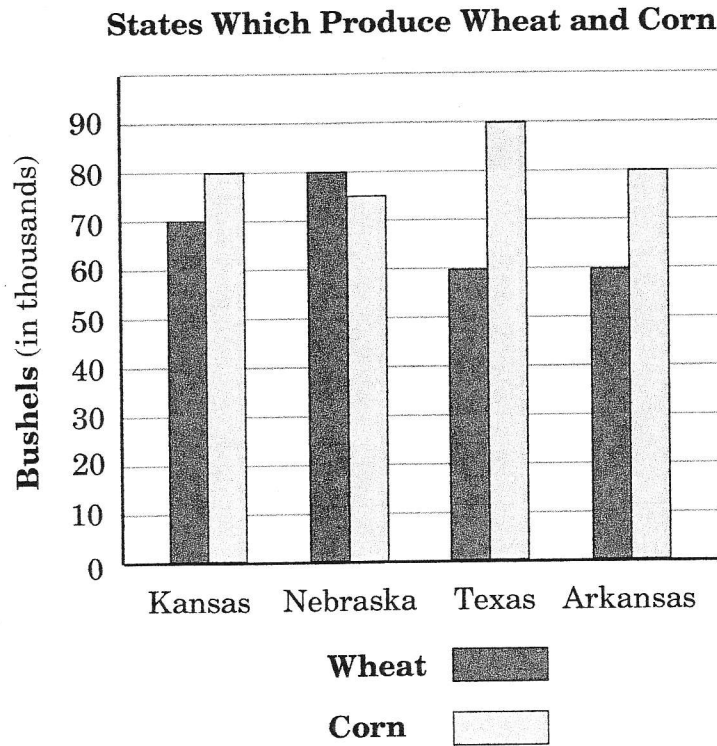
7. There are 36 fifth graders in art class. The art teacher wants to arrange their pictures on the wall so that one is in the first row, two are in the second row, three are in the third row, etc. How many rows of pictures will there be?
- A 8 rows
B 9 rows
C 10 rows
D 11 rows

8. A store manager looked at his September sales graphs to decide which shoes he would need to order to sell the most shoes. What should he decide?



- A white tennis shoes in the \$31 - \$40 range
B black tennis shoes and white tennis shoes in the \$31 - \$50 range
C black tennis shoes in the \$51 - \$60 range
D white tennis shoes in the \$51 - \$60 range

9. Brandon created a graph showing the amount of harvested wheat and corn in four states.

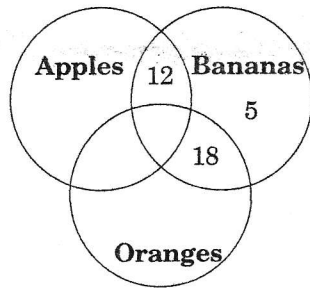


Which two states harvest *approximately* the same amount of corn?

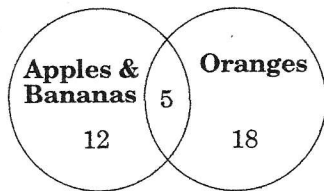
- A Kansas and Nebraska
- B Kansas and Arkansas
- C Nebraska and Arkansas
- D Texas and Arkansas

10. A survey showed that 12 students in Mrs. Scott's class liked apples and bananas but not oranges, 18 students liked oranges and bananas but not apples, and five students liked only bananas. Which Venn diagram shows this?

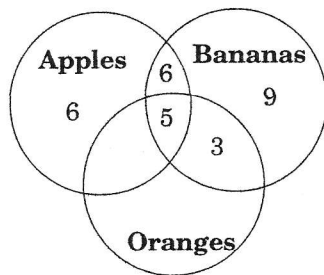
A



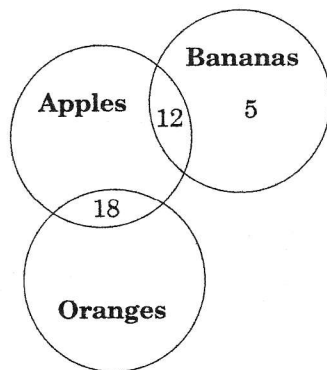
B



C



D



11. The music club wants to raise \$3,900 by selling candy bars. They will earn \$1 for each bar they sell. There are 45 students in the club and each student sells the same number of candy bars. What is the ***fewest*** number of candy bars each member must sell to reach the club's goal?

A 81
B 86
C 87
D 95

12. Calvin's family must travel 468 miles to reach his grandparents' house. His father drives 65 miles per hour. How will Calvin determine how much time the trip will take?

A divide miles by miles per hour
B divide miles per hour by miles
C multiply miles per hour by miles
D add miles and miles per hour

13. Each shelf holds about 28 books. To estimate how many shelves are needed for 86 books, which equation should be used?

A $90 + 30 = 120$
B $90 \div 30 = 3$
C $90 - 30 = 60$
D $90 \times 30 = 2,700$

14. Ms. Phillips is buying food for a picnic. She went to a discount store that sells food that is boxed in large amounts.

Boxed Quantities

Item	Amount per box
hot dogs	15
hot dog buns	10
bags of potato chips	12

What is the ***least*** number of boxes of potato chips that Ms. Phillips should buy in order to have the same number of hot dogs, buns, and bags of potato chips?

A 3
B 4
C 5
D 6

15. Stephan will take care of his neighbors' house for the month of June. They asked him to water the grass every fourth day and to water the houseplants every sixth day. When will Stephan need to water ***both*** the grass and the houseplants?

A June 12
B June 12 and 24
C June 12, 18, and 24
D June 4, 6, 12, and 24

16. $\triangle \triangle = \square \triangle \square$ $\triangle \square = \bigcirc \bigcirc$

$$\triangle = 50$$

Using the diagram above, which of the following statements is true?

A $\bigcirc < \triangle$

B $\square > \bigcirc$

C $\triangle < \square$

D $\triangle < \bigcirc$

17. Olivia has taken several tests this semester. Her grades are:

88, 94, 100, 98, 94, 95, 100

If she makes a 70 on her next test, what will be the mean of her test scores?

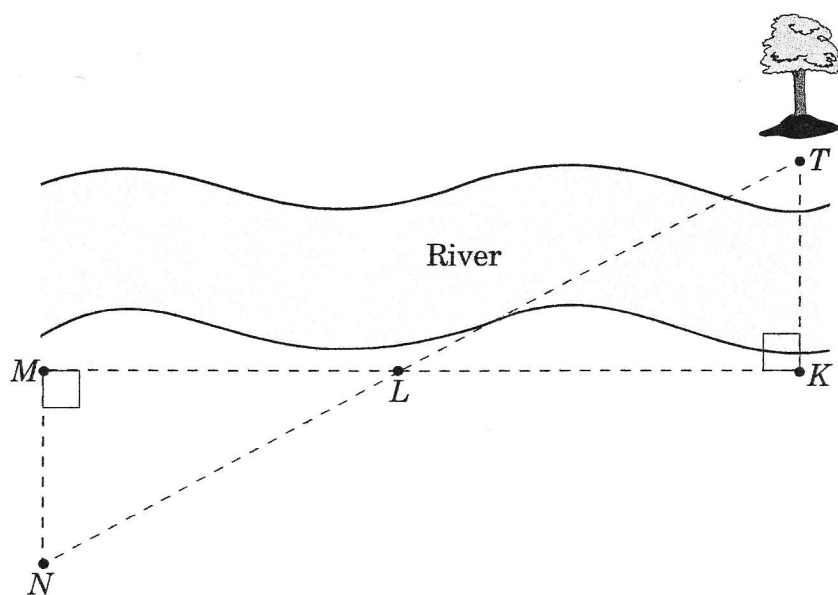
A 92

B 94

C 95

D 96

18. Sara and her friend used similar triangles to find a relationship between the width of the river and the distance MN .

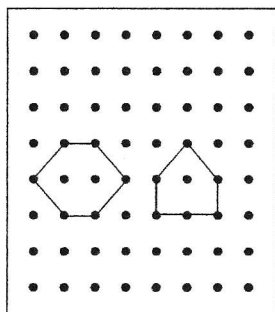


If $\triangle LMN$ is similar to $\triangle LKT$, and the measure of angle N is 62° , which angle has the same measure as angle N ?

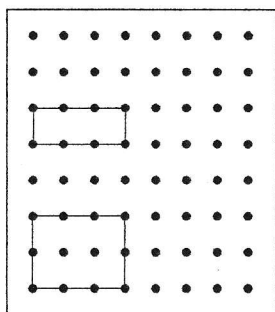
- A K
- B L
- C M
- D T

19. Jan was using a geoboard to make plane figures. Which model shows similar plane figures?

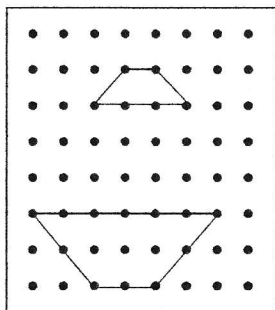
A



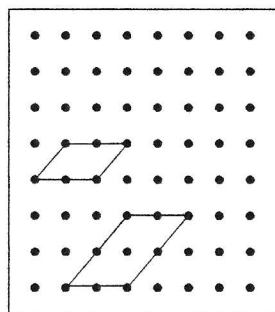
B



C



D



20. The total area of two walls is 23 m^2 . A roll of wallpaper covers 8 m^2 . The store sells only full rolls. What is the **fewest** number of rolls needed to cover the two walls?

- A 1 roll
- B 2 rolls
- C 3 rolls
- D 4 rolls

Mathematics Reference Sheet

Grade 5

Use the information below, as needed, to answer questions on the Mathematics test.

Square	Rectangle	Triangle
Area = $s \times s$ Perimeter = $4 \times s$	Area = $l \times w$ Perimeter = $(2 \times l) + (2 \times w)$	Perimeter = $a + b + c$

1 foot = 12 inches

1 yard = 3 feet

1 mile = 5,280 feet

1 cup = 8 ounces (oz)

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 kilogram = 1000 grams

1 meter = 100 centimeters

1 centimeter = 10 millimeters

1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 pound (lb) = 16 ounces (oz)

Mathletes Challenge 2012 Round 2 (1st Half)

Name: _____

1. ☐ A ☐ B ☐ C ☐ D2. ☐ A ☐ B ☐ C ☐ D3. ☐ A ☐ B ☐ C ☐ D4. ☐ A ☐ B ☐ C ☐ D5. ☐ A ☐ B ☐ C ☐ D6. ☐ A ☐ B ☐ C ☐ D7. ☐ A ☐ B ☐ C ☐ D8. ☐ A ☐ B ☐ C ☐ D9. ☐ A ☐ B ☐ C ☐ D10. ☐ A ☐ B ☐ C ☐ D11. ☐ A ☐ B ☐ C ☐ D12. ☐ A ☐ B ☐ C ☐ D13. ☐ A ☐ B ☐ C ☐ D14. ☐ A ☐ B ☐ C ☐ D15. ☐ A ☐ B ☐ C ☐ D16. ☐ A ☐ B ☐ C ☐ D17. ☐ A ☐ B ☐ C ☐ D18. ☐ A ☐ B ☐ C ☐ D19. ☐ A ☐ B ☐ C ☐ D20. ☐ A ☐ B ☐ C ☐ D

Mathletes Challenge 2012 Round 2 (1st Half)Name: KEY

1. ☐ A ☐ B ☐ C ☒ D
2. ☒ A ☐ B ☐ C ☐ D
3. ☒ A ☐ B ☐ C ☒ D
4. ☐ A ☐ B ☐ C ☒ D
5. ☐ A ☒ B ☐ C ☐ D
6. ☐ A ☐ B ☒ C ☐ D
7. ☒ A ☐ B ☐ C ☐ D
8. ☐ A ☒ B ☐ C ☐ D
9. ☐ A ☒ B ☐ C ☐ D
10. ☒ A ☐ B ☐ C ☐ D
11. ☐ A ☐ B ☒ C ☐ D
12. ☒ A ☐ B ☐ C ☐ D
13. ☐ A ☒ B ☐ C ☐ D
14. ☐ A ☐ B ☒ C ☐ D
15. ☐ A ☒ B ☐ C ☐ D
16. ☒ A ☐ B ☐ C ☐ D
17. ☒ A ☐ B ☐ C ☐ D
18. ☐ A ☐ B ☐ C ☒ D
19. ☐ A ☐ B ☒ C ☐ D
20. ☐ A ☐ B ☒ C ☐ D