

2011 Penny Sikes – Farmers and Merchants Bank
5th and 6th Grade Mathematics Tournament

6th Grade Test

1. Mr. Duran handed out 32 sheets of graph paper equally among 8 groups of students. Which equation can be used to find s , the number of sheets of paper each group received?

- A. $s = 32 \div 8$ B. $s = 32 \cdot 8$ C. $s = 32 - 8$ D. $s = 32 + 8$

2. What is the prime factorization of 220?

- A. $2 \cdot 5 \cdot 11$ B. $2^2 \cdot 5 \cdot 11$ C. $2 \cdot 55$ D. $2^2 \cdot 5 \cdot 5$

3. Jeremy received \$70 as a gift. He wanted to use the money to go to the movies and to buy a book. He wanted to save the money he had left. Which is the correct order of steps to find the amount of money Jeremy would have left to save?

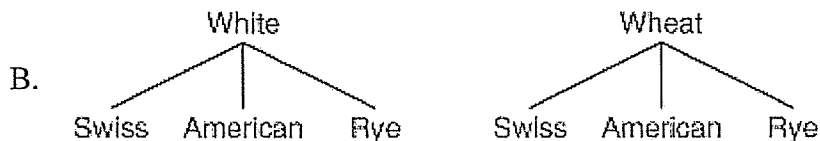
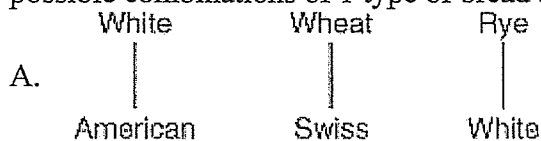
Step K: Find the sum of the costs of the movie and the book.

Step L: Find the difference between \$70 and the sum of the costs of the movie and the book.

Step M: Identify the cost of the movie and the cost of the book.

- A. L, K, M B. L, M, K C. K, L, M D. M, K, L

4. A customer at Steven's Sub Stop can choose from white, wheat, and rye bread. The customer can also choose from American and Swiss cheese. Which diagram shows all the possible combinations of 1 type of bread and 1 type of cheese?



5. Irma has \$10.00 to buy apples. Apples at the market are \$2.50 per bag. Which additional information is needed to find the number of apples Irma can buy?
- A. The cost of apples per pound B. The size of each bag of apples
 C. The weight of each apple D. The number of apples in each bag
6. The ratio of women to men in a local book club is 7 to 3. Which combination of women and men could the club have?
- A. 21 women and 9 men B. 35 women and 50 men
 C. 14 women and 9 men D. 21 women and 15 men

7. Acorn woodpeckers live in families. The family members collect acorns and store them in the trunks of trees. The table below shows information about the number of acorns collected and eaten by a family of woodpeckers on 3 days.

Acorns Collected and Eaten

Day	Number Collected	Number Eaten
Monday	23	8
Tuesday	29	10
Wednesday	42	9

Which expression best describes the number of acorns the family has after Wednesday if the family had stored 428 acorns before Monday?

- A. $428 - 23 + 8 - 29 + 10 - 42 + 9$ B. $428 + 23 - 8 + 29 - 10 + 42 - 9$
 C. $23 - 8 + 29 - 10 + 42 - 9 - 428$ D. $23 + 8 - 29 + 10 - 42 + 9 + 428$

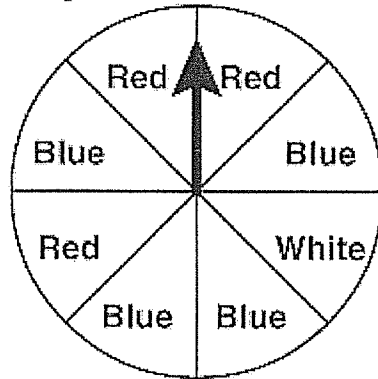
8. Mrs. Sandoval has 60 folders, 45 pairs of scissors, and 30 rulers. What is the greatest common factor Mrs. Sandoval can use to divide the school supplies into equal groups?

- A. 3 B. 5 C. 10 D. 15

9. A parent group is planning an awards dinner for students, teachers, and parents. The parent group plans to seat the guests around a circular table that has seating for 30. The guests will be seated in the order of student, teacher, parent, in a repeating pattern. Will the 20th guest be a student, a teacher, or a parent?

- A. Student B. Teacher C. Parent D. Cannot be determined

10. Jocelyn made a spinner with equal sections, as shown below.



If Jocelyn spins only one time, what is the probability that the arrow will NOT land on a red section of the spinner?

- A. $\frac{1}{8}$ B. $\frac{5}{8}$ C. $\frac{3}{8}$ D. $\frac{1}{2}$

11. Palmer participated in sports for 8 hours and drama for 5 hours during a period of 2 weeks. If Palmer continues participating in these activities at this rate, how many hours will he spend participating in them during 52 weeks?

- A. 13 hours B. 338 hours C. 8 hours D. 208 hours

12. Nicole was on the decorating committee for a school dance. She made 5 different circular designs for the decorations. The committee agreed to use a design with a diameter of 19 inches. Which is closest to the circumference in inches of the design the committee chose?

- A. 13 in. B. 60 in. C. 95 in. D. 300 in.

13. Which equation best represents the relationship between x and y in the table below?

Input-Output Table

x	y
1	7
3	11
5	15
20	45

- A. $y = 7x$ B. $y = 3x + 4$ C. $y = 2x + 5$ D. $y = x + 6$

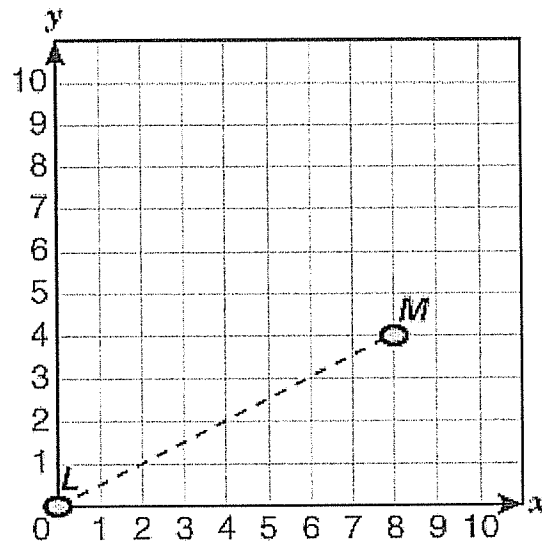
14. Ms. Meléndez needs to replace the batteries in 20 calculators. Each calculator uses 4 batteries. The batteries are sold in packages of 16. How many packages of batteries does Ms. Meléndez need to buy?

- A. 64 B. 4 C. 80 D. 5

15. The total length of all the songs on a CD Mohammed bought is about 80 minutes. Each song is between 4 and 6 minutes long. Which is a reasonable number of songs that could be on the CD?

- A. 10 B. 40 C. 74 D. 16

16. The coordinate grid shows point L , the position of the rover *Spirit* when it landed on Mars, and the path it followed to point M . Point M shows the position of the rover after it traveled 100 meters.



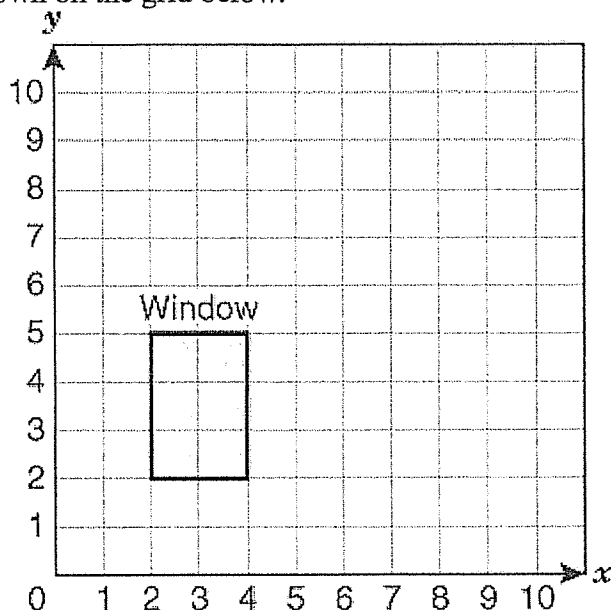
Which of the following best shows the position of the rover when it was halfway between point L and point M ?

- A. (2, 4) B. (4, 8) C. (4, 2) D. (8, 4)

17. Ted collected 22 pounds of aluminum cans. How many ounces of aluminum cans did he collect?

- A. 6 oz B. 38 oz C. 352 oz D. 220 oz

18. A window is shown on the grid below.



Which ordered pairs best represent the 4 vertices of the window?

- A. (4, 2), (2, 2), (5, 2), (4, 5) B. (2, 2), (2, 4), (5, 2), (5, 4)
 C. (2, 2), (4, 2), (4, 5), (2, 5) D. (4, 2), (5, 4), (5, 2), (2, 2)

19. 102 minutes after 10:00 am is how many minutes before noon?

- A. 18 B. 28 C. 32 D. 42 E. 58

20. The product of two whole numbers is 30 and their sum is 17. What is the positive difference between these two numbers?

- A. 1 B. 2 C. 7 D. 10 E. 13

21. Starting with **653.187**, create a new number by switching the tens' digit and the hundredths' digit. How much greater is the larger number than the smaller number?

- A. 19.998 B. 29.97 C. 39.6 D. 90 E. 499.5

22. $\frac{3}{5} = \frac{A}{45} = \frac{60}{B}$ What does $A+B$ equal?

- A. 27 B. 29 C. 45 D. 109 E. 127

23. Doug bought three T-shirts at \$8.90 each and a pair of jeans for \$18.50. How much change does Doug get from a \$50 bill?

- A. \$0 B. \$4.80 C. \$5.20 D. \$15.50 E. \$22.60

24. Determine both the least common multiple of 6 and 9 and the greatest common factor of 6 and 9. What is their sum?

- A. 12 B. 21 C. 24 D. 51 E. 57

25. The perimeter of a rectangle is 40 cm. Its width is 8 cm. What is the area of this rectangle?

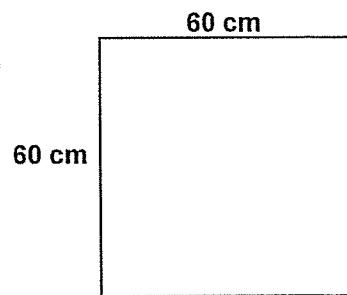
- A. 5 cm^2 B. 12 cm^2 C. 64 cm^2 D. 96 cm^2 E. 256 cm^2

26. On a Friday drive from St. Louis to Chicago, Aaron shares the driving with a friend. Before lunch, Aaron drove $\frac{1}{3}$ of the 180 miles covered. After lunch, Aaron drove $\frac{1}{4}$ of the 120 miles they had left. What fraction of the day's trip did Aaron drive?

- A. $\frac{3}{10}$ B. $\frac{2}{7}$ C. $\frac{7}{12}$ D. $\frac{1}{2}$ E. $\frac{2}{5}$

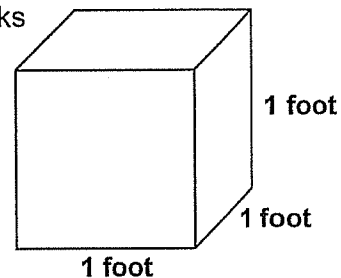
27. What is the maximum number of 4 cm by 10 cm rectangles that can be cut from this 60 cm by 60 cm square?

- A. 21 B. 36 C. 45
D. 60 E. 90



28. What is the maximum number of 4 inch by 4 inch by 2 inch blocks that can be cut from a wooden cube one foot on a side?

- A. 24 B. 36 C. 54
D. 72 E. 108

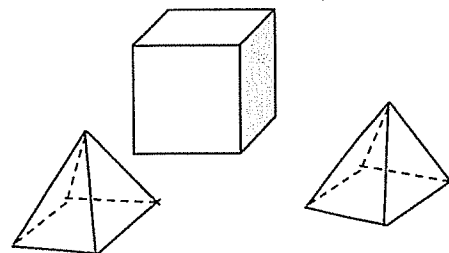


29. Two standard 6-sided dice are rolled. What is the probability that the sum is 10, 11, or 12?

- A. $\frac{1}{6}$ B. $\frac{3}{11}$ C. $\frac{1}{4}$ D. $\frac{1}{12}$ E. $\frac{3}{8}$

30. You are given a cube, 10 cm on a side, and two identical pyramids with square bases, 10-cm on a side. You glue the two pyramids to opposite faces of the cube so that the 10 cm squares line up. How many edges does the solid have?

- A. 8 B. 12 C. 16
D. 20 E. 24



31. Emily, Sarah, and Andrea share a bowl of strawberries. First, Emily ate $\frac{1}{3}$ of them. Then Sarah ate $\frac{1}{3}$ of the remaining strawberries. Andrea ate the last 8 strawberries. How many strawberries did Emily eat?

- A. 6 B. 8 C. 12 D. 24 E. 48

32. Which one of these five numbers is the greatest?

- A. $\frac{1}{15} \div \frac{1}{18}$ B. $\frac{1}{18} \div \frac{1}{15}$ C. $\frac{1}{18} * \frac{1}{15}$ D. $\frac{1}{18} + \frac{1}{15}$ E. $\frac{1}{15} - \frac{1}{18}$

33. A 2 m deep by 20 m length by 12 m width rectangular pool is filled with water. When all of this water is transferred into a 16 m by 16 m rectangular pool, how deep will the water be?

- A. 1.6 m B. 1.75 m C. 1.875 m D. 2 m E. 2.25 m

34. The title of a book is the "**The 10th Prime**". What is the 10th prime number?

- A. 23 B. 27 C. 29 D. 31 E. 37

35. The total value of 750 dimes equals the total value of how many quarters?

- A. 150 B. 200 C. 225 D. 300 E. 375

36. "*Four score and seven years*" after 1776, President Lincoln gave his famous speech at the Gettysburg battlefield in Pennsylvania. Given that a 'score' represents 20 years, in what year was the Gettysburg Address given?

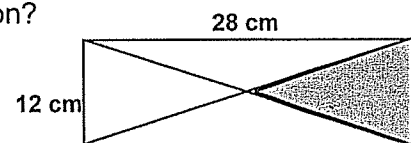
- A. 1787 B. 1887 C. 1857 D. 1863 E. 1867

37. What does "*one million times one billion divided by one trillion*" equal?

- A. 1 B. 1 thousand C. 1 million D. 1 billion E. 1 trillion

38. What is the area, in square centimeters, of the shaded region?

- A. 20 B. 42 C. 84
D. 168 E. 336



39. Evaluate: $\frac{2 - \frac{2}{3}}{1 - \frac{1}{6}}$

- A. $\frac{7}{6}$ B. $\frac{5}{6}$ C. $\frac{2}{5}$ D. $\frac{6}{5}$ E. $\frac{8}{5}$

40. The Davis' house had 1200 square feet of living space before they added on a 20 foot by 15 foot rectangular room. By what percent had their amount of living space increased?

- A. 2.9% B. 10% C. 12.5% D. 20% E. 25%

41. How many odd numbers are positive factors of 90?

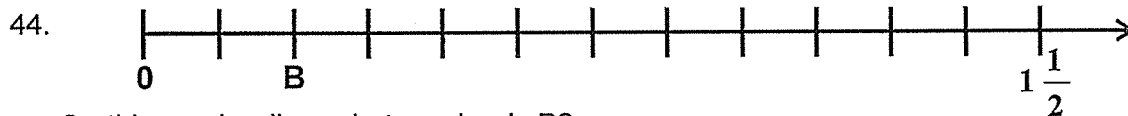
- A. 2 B. 3 C. 4 D. 5 E. 6

42. Today is Saturday, March 17, 2007. The Fourth of July is 109 days away. On what day of the week is July 4, 2007?

- A. Sunday B. Monday C. Tuesday D. Wednesday E. Thursday

43. A bag contains only red marbles and green marbles. There are 30 green marbles in the bag. If the probability of selecting one red marble at random is $\frac{3}{5}$, how many red marbles are in the bag?

- A. 12 B. 18 C. 42 D. 45 E. 50



On this number line, what number is B?

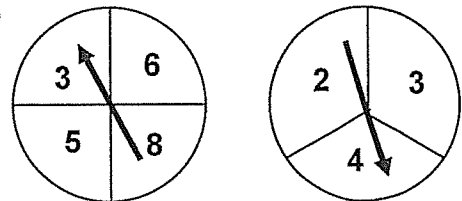
- A. $\frac{1}{4}$ B. $\frac{1}{6}$ C. $\frac{1}{5}$ D. $\frac{2}{11}$ E. $\frac{1}{3}$

45. In how many different ways can 40 cents be made using any combination of nickels, dimes, and quarters? (A solution is allowed to include none of one or two types of coins.)

- A. 5 B. 6 C. 7 D. 8 E. 10

46. These two fair spinners, divided into fourths and thirds, are each spun once. What is the probability that the product of the two numbers spun is even?

- A. $\frac{1}{2}$ B. $\frac{7}{12}$ C. $\frac{3}{4}$
D. $\frac{5}{6}$ E. $\frac{11}{12}$



47. From an 8x8x8 cube, a 2x2x2 cube is removed from each corner. What fraction of the 8x8x8 cube is removed?

- A. $\frac{1}{4}$ B. $\frac{1}{8}$ C. $\frac{1}{2}$ D. $\frac{3}{32}$ E. $\frac{3}{8}$

48. A bag contains only blue marbles, green marbles, and 24 red marbles. If the probability of drawing a blue marble is $\frac{1}{2}$ and the probability of drawing a green marble is $\frac{1}{8}$, how many green marbles are in the bag?

- A. 3 B. 4 C. 5 D. 6 E. 8

49. If $\frac{2}{5}$ of a cup of fish food can feed 24 goldfish, how many goldfish can be fed with 3 cups of fish food?

- A. 120 B. 144 C. 156 D. 168 E. 180

50. If $x = -0.5$, which is the least of these five numbers?

- A. x B. x^2 C. x^3 D. x^4 E. x^5

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5th and 6th Grade Mathematics Tournament

6th Grade Test Key

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|-------|-------|
| 1. A | 26. A |
| 2. B | 27. E |
| 3. D | 28. C |
| 4. C | 29. A |
| 5. D | 30. D |
| 6. A | 31. A |
| 7. B | 32. A |
| 8. D | 33. C |
| 9. B | 34. C |
| 10. B | 35. D |
| 11. B | 36. D |
| 12. B | 37. B |
| 13. C | 38. C |
| 14. D | 39. E |
| 15. D | 40. E |
| 16. C | 41. E |
| 17. C | 42. D |
| 18. C | 43. D |
| 19. A | 44. A |
| 20. E | 45. C |
| 21. B | 46. D |
| 22. E | 47. B |
| 23. B | 48. E |
| 24. B | 49. E |
| 25. D | 50. A |