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MATH KANGAROO 2004 in USA
Level of Grades 5 - 6

3 points each

1. How much is $1000 - 100 + 10 - 1$?

- A) 111 B) 900 C) 909 D) 990 E) 999

2. In each of the little squares Karolina places one of the digits: 1, 2, 3, 4. She makes sure that in each row and each column each of these numbers is placed. In the figure below, you can see the way of filling these squares. What number should she put in the square marked with an x ?

1		x	2
4	1		
	3		
	2		

- A) 1 B) 2 C) 3 D) 4 E) Cannot be determined.

3. $(10 \cdot 100) \cdot (20 \cdot 80) =$

- A) $20,000 \cdot 80,000$ B) $2000 \cdot 8000$ C) $2000 \cdot 80,000$ D) $20,000 \cdot 8000$ E) $2000 \cdot 800$

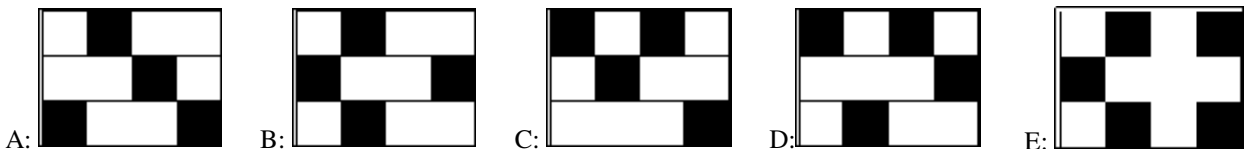
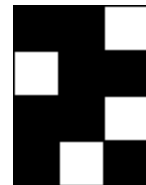
4. 360,000 seconds is:

- A) 3 hours B) 6 hours C) 8.5 hours D) 10 hours E) More than 90 hours.

5. What is the remainder when you divide 20042003 by 2004?

- A) 0 B) 1 C) 2 D) 3 E) 2003

6. Five identical sheets of a plastic rectangles were divided into white and black squares. Which of the sheets from A to E has to be covered with the sheet to the right in order to get totally black rectangle?



7. Which of the following numbers is not a factor of 2004?

- A) 3 B) 4 C) 6 D) 8 E) 12

8. The three members of a rabbit family ate 73 carrots altogether during a week. The father ate five carrots more than the mother. Their son ate 12 carrots. How many carrots did mother eat in that week?

- A) 27 B) 28 C) 31 D) 33 E) 56

9. Nine bus stops are equally spaced along a bus route. The distance between the first stop and the third one is 600 m. How long is the bus route?

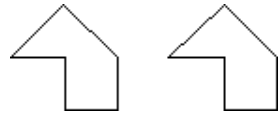
- A) 1800 m B) 2100 m C) 2400 m D) 2700 m E) 3000 m

10. The value of the expression $1 - (2 - (3 - (4 - 5)))$ is equal to:

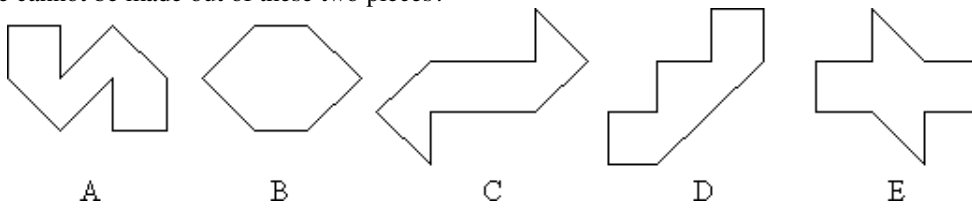
- A) 0 B) -3 C) -9 D) 3 E) 9

4 points each

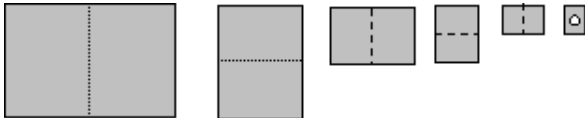
11. You are given two identical puzzle pieces and you are not allowed to turn them over.



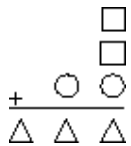
Which figure cannot be made out of these two pieces?



12. Karol folds a sheet of paper in a half and then repeats this four more times. Then he makes a hole in the folded paper. How many holes does the sheet of paper have after unfolding?



- A) 6 B) 10 C) 16 D) 20 E) 32



13. The different figures represent different digits. Find the digit corresponding to the square.

- A) 9 B) 8 C) 7 D) 6 E) 5

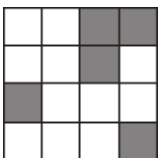
14. The weight of 3 apples and 2 oranges is 255 g. The weight of 2 apples and 3 oranges is 285 g. Each apple weighs the same and each orange weighs the same. What is the combined weight of 1 apple and 1 orange?

- A) 110 g B) 108 g C) 105 g D) 104 g E) 102 g

15. Tomek, Romek, Andrzej, and Michal said the following about a certain number: Tomek: "This number is equal to 9"; Romek: "This number is prime."; Andrzej: "This number is even."; Michal: "This number is equal to 15." Only one statement given either by Romek or Tomek is true, as well as only one statement given by either Andrzej or Michal is true. What number is it?

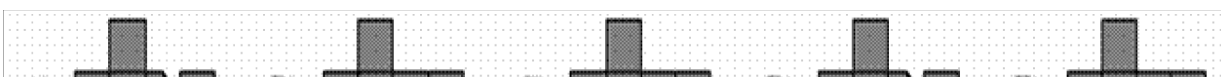
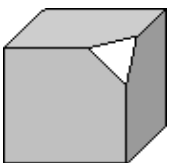
- A) 1 B) 2 C) 3 D) 9 E) 15

16. What is the smallest number of the little squares that have to be shaded in order to get at least one axis of symmetry of the figure below?

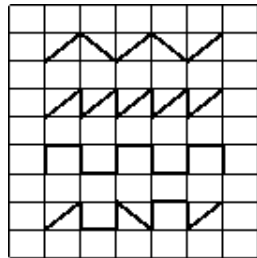


- A) 1 B) 2 C) 3 D) 4 E) 5

17. One corner of a cube was cut off. Which of the figure below represents the pattern of the cube after unfolding it?



18. Four snails: Fin, Pin, Rin, and Tin are moving along identical rectangular tiles. The shape and length of each snail's trip is shown below. How many decimeters has snail Tin gone?



Snail Fin has gone 25 dm.

Snail Pin has gone 37 dm.

Snail Rin has gone 38 dm.

Snail Tin has gone ? dm

- A) 27 dm B) 30 dm C) 35 dm D) 36 dm E) 40 dm

19. The Island of Turtles has an unusual weather system: Mondays and Wednesdays are rainy, Saturdays are foggy and the other days are sunny. A group of tourists would like to go on a 44-day long vacation to the island. Which day of the week should be the first day of their vacation in order to enjoy the most of the sunny days?

- A) Monday B) Wednesday C) Thursday D) Friday E) Tuesday

20. The sum of two natural numbers is equal to 77. If the first number is multiplied by 8 and the second by 6, then those products are equal. The larger of these numbers is:

- A) 23 B) 33 C) 43 D) 44 E) 54

5 points each

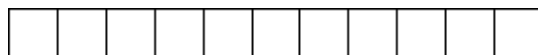
21. The number of all divisors of number $2 \cdot 3 \cdot 5 \cdot 7$ is equal to:

- A) 4 B) 14 C) 16 D) 17 E) 210

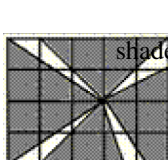
22. Ella and Ola had 70 mushrooms altogether. $\frac{5}{9}$ of Ella's mushrooms are brown and $\frac{2}{17}$ of Ola's mushrooms are white. How many mushrooms did Ella have?

- A) 27 B) 36 C) 45 D) 54 E) 10

23. There are 11 fields in the picture. Number 7 is written in the first field and number 6 in the ninth field. What number has to be placed in the second field so that the sum of the numbers from every three consecutive fields is equal to 21?



- A) 7 B) 8 C) 6 D) 10 E) 21



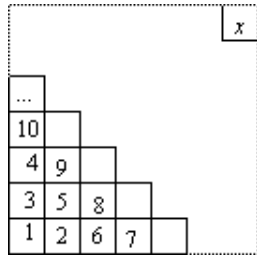
24. The square below was divided into small squares. What part of the area of the shaded figure is the area of the figure that is not shaded?

- A) $\frac{1}{4}$ B) $\frac{1}{5}$ C) $\frac{1}{6}$ D) $\frac{2}{5}$ E) $\frac{2}{7}$



25. In a CD store two CDs have the same price. The price of the first CD was reduced by 5 % and the price of the other one was increased by 15%. After this change the prices of the two CDs differ by \$6.00. How much is the cheaper CD now?

- A) \$1.50 B) \$6.00 C) \$28.50 D) \$30.00 E) 34.50



26. In the little squares of a big square the consecutive natural numbers are placed in a way shown in the figure. Which of the numbers below cannot be placed in the square with letter x ?

- A) 128 B) 256 C) 81 D) 121 E) 400

27. Ania divided number $\frac{111\dots1}{2004}$ by 3. What is the number of zeros in the quotient?

- A) 670 B) 669 C) 668 D) 667 E) 665

28. Imagine that you have 108 red balls and 180 green balls. The balls have to be packed in boxes in such a way that every box contains the same number of balls and there are balls of only one color in every box. What is the smallest number of boxes that you need?

- A) 288 B) 36 C) 18 D) 8 E) 1

29. During a competition in the Kangaroo Summer Camp in Zakopane students were given 10 problems to solve. For each correct answer a student was given 5 points and for each incorrect one the student was losing 3 points. Everybody solved all the problems. Mathew got 34 points, Philip got 10 points and John got 2 points. How many problems did they answer correctly all together?

- A) 17 B) 18 C) 15 D) 13 E) 21

30. A right triangle with legs of length 6cm and 8cm was cut out of a paper and then folded along a straight line. Which of the numbers below can express the area of the resulting polygon?

- A) 9 cm^2 B) 12 cm^2 C) 18 cm^2 D) 24 cm^2 E) 30 cm^2

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