

Contest Game
"Math Kangaroo", 2002
Grade 5-6

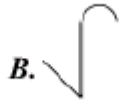
Part A: Each question is worth 3 points

1. 2002 is a number that stays the same when read backwards as when read forwards. Which of the following numbers does not have this property?
 A. 1991 B. 2323 C. 2112 D. 2222 E. 191

2. Far away we see the skyline of a castle.

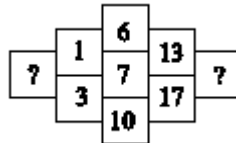


Which of the pieces cannot belong to the skyline?



3. The kangaroo's dad and mom have 3 little kangaroo girls. Each girl has two kangaroo brothers. How many members are there in the kangaroo family?
 A. 11 B. 9 C. 8 D. 7 E. 5

4. What numbers should be in the boxes instead of the ?-signs?



- A. 2 and 14 B. 2 and 30 C. 3 and 221 D. 4 and 14 E. 4 and 30
5. On the next day after my birthday this year, it would be correct to say "The day after tomorrow is a Thursday." On which day is my birthday?
 A. Monday B. Tuesday C. Wednesday D. Thursday E. Friday

6. On which of the following necklaces are the dark hearts two thirds of all hearts?



A

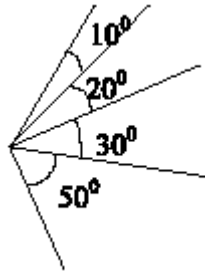
B.

C.

D.

E.

7. How many angles with different degree measures can be seen in the picture?



- A. 4 B. 6 C. 8 D. 10 E. 11

8. The area of a rectangle equals 1. What is the area of the triangle, which is cut off from the rectangle by the line connecting the midpoints of the two adjacent sides?

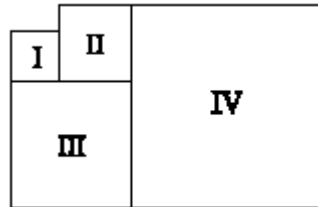
- A. $1/3$ B. $1/4$ C. $2/5$ D. $3/8$ E. $1/8$

Part B: Each question is worth 4 points.

9. What is the difference between the biggest and the smallest three-digit each formed by different digits?

- A. 899 B. 885 C. 800 D. 100 E. other

10. Figures I, II, III and IV are squares. The circumference of square I is 16m and the circumference of square II is 24m.



Find the circumference of square IV.

- A. 56m B. 60m C. 64m D. 72m E. 80m

11. Julien, Manon, Nicolas and Fabienne each have a different pet: a cat, a dog, a parrot and a goldfish. Manon has a furry animal, Fabienne owns a four-legged creature, Nicolas has a bird and Manon doesn't like cats. Which statement is *not* true?

- A. Fabienne has a dog B. Nicolas has a parrot C. Julien has a goldfish
D. Fabienne has a cat E. Manon has a dog

12. Christian added 3g. of salt to 17g. of water. What is the percentage of salt in the solution obtained?

- A. 20% B. 17% C. 16% D. 15% E. 6%

13. Six kids ate 20 cookies altogether. Andrew ate one cookie, Betty ate two cookies, Carl ate three cookies. Daniella ate more cookies than any of the other kids. What is the smallest possible number of cookies that Daniella ate?

- A. 3 B. 4 C. 5 D. 6 E. 7

14. A computer virus is eating disk space. During the first day it eats $\frac{1}{2}$ of the disk. During the second day, it eats $\frac{1}{3}$ of the remaining disk space. The third day it eats $\frac{1}{4}$ of what still remains and the fourth day it eats $\frac{1}{5}$ of what is left. What fraction of the original disk space remains intact?

- A. $\frac{1}{5}$ B. $\frac{1}{6}$ C. $\frac{1}{10}$ D. $\frac{1}{12}$ E. $\frac{1}{24}$

15. In Mesopotamia in 2500 B.C.,



This sign was used to represent 1,



This – to represent 10 and



This - to represent 60. Thus, 22 would be written like this:



How would 124 have been written?

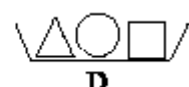
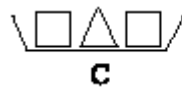
- A. B. C. D. E.

16. 28 children took part in a math league competition. The number of children who finished behind Raul was twice as large as the number of children who were more successful than him. In which place did Raul finish?

- A. Sixteenth B. Seventeenth C. Eighth D. Ninth E. Tenth

Part C: Each question is worth 5 points.

17. Three plates, A, B, and C are arranged in increasing order of their weight.



To keep this order, plate D must be placed:

- A. between A and B B. between B and C C. before A
D. after C E. D and C have the same weight

18. What is the maximum value of the sum of the digits of the sum of the digits of a three-digit number?

- A. 9 B. 10 C. 11 D. 12 E. 18

19. Five boys weighed themselves in pairs in all possible combinations. The measured weights were 90kg, 92kg, 93kg, 94kg, 95kg, 96kg, 97kg, 98kg, 100kg and 101kg. The total weight of the five boys was:
A. 225 kg B. 230 kg C. 239 kg D. 240 kg E. 250 kg
20. In a children's game you count from 1 to 100 and applaud every time that you find either a multiple of 3 or a number ending with 3. How many times are you supposed to applaud?
A. 30 B. 33 C. 36 D. 39 E. 43
21. One cat and a half eat one mouse and a half in one hour and a half. How many mice can 15 cats eat in 15 hours?
A. 15 B. 45 C. 60 D. 125 E. 150
22. Magician Anthony has in his magic hat 14 grey, 8 white and 6 black mice. What is the least number of mice he has to take out of his hat blindfolded to be absolutely certain that he has got at least one mouse of each colour?
A. 23 B. 22 C. 21 D. 15 E. 9
23. A circle, a square, and a triangle are drawn overlapping on the plane. What is the maximum possible number of intersection points determined by these three figures?
A. 14 B. 16 C. 18 D. 20 E. 22
24. In a basketball tournament 32 teams are competing. At each stage the teams are divided into groups of 4. In each group every team plays once against every other team. The best two teams are qualified for the next round. The other two teams are eliminated. After the last stage the two remaining teams play one final match to determine the winner. How many matches will be played in the whole tournament?
A. 49 B. 89 C. 91 D. 97 E. 181