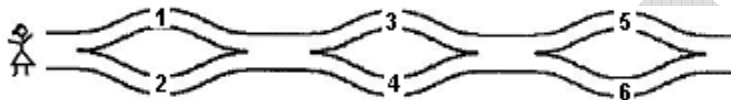


International Contest-Game MATH KANGAROO Canada, 2007

Grade 3 and 4

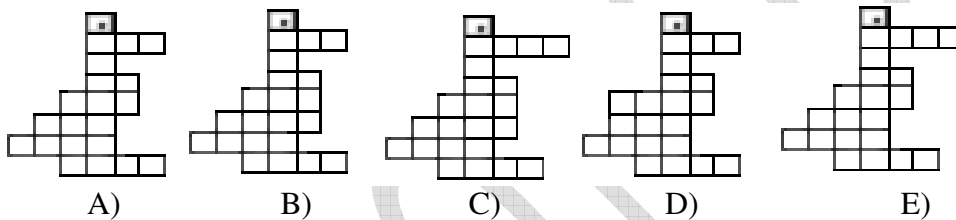
Part A: Each correct answer is worth 3 points.

1. Zita walked from the left to the right and wrote the numbers she saw along the roads in her notepad. Which of the following groups of numbers could be the numbers written by Zita?



- A) 1,2 and 4 B) 2,3 and 4 C) 2,3 and 5 D) 1,5 and 6 E) 1,2 and 5

2. Which of the Kangaroo figures contains the greatest number of little squares?



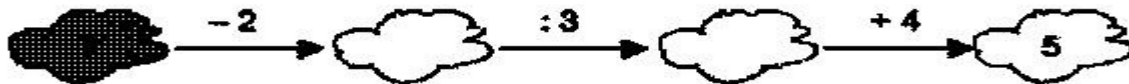
3. How many common letters do the words KANGAROO and PROBLEM have?

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

4. The numbers 34 and 142 have the same sum of their digits ($3+4=7$ and $1+4+2=7$). What is the first number greater than 2007 such that the sum of its digits is the same as the sum of the digits of 2007?

- A) 2016 B) 2115 C) 2008 D) 7002 E) 2070

5. Emma wrote her favourite number in the dark cloud and performed correctly several calculations following the sequence in the diagram. What is Emma's favourite number?



- A) 1 B) 3 C) 5 D) 7 E) 9

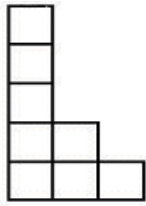
6. There are 9 lampposts on one side of the path in the park. The distance between each pair of neighbouring lampposts is 8 metres. George was jumping all the way from the first lamppost to the last one. How many metres has he jumped?

- A) 48 B) 56 C) 64 D) 72 E) 80

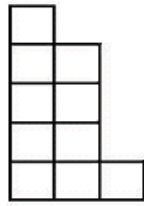
7. The combination for opening a safe is a three – digit number made up of different digits. How many different combinations can you make using only digits 1, 3, and 5?

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

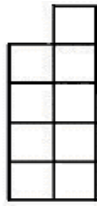
8. Which of the five pieces below fits together with the one given on the right to form a rectangle?



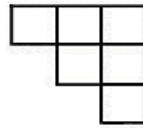
A)



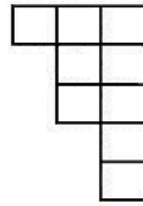
B)



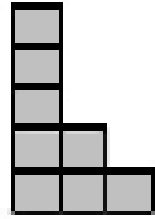
C)



D)



E)



Part B: Each correct answer is worth 4 points.

9. What is the answer to $4 \times 4 + 4 + 4 + 4 + 4 + 4 \times 4$?

- A) 32 B) 144 C) 48 D) 56 E) 100

10. The square in the figure is a *mini-sudoku*: the numbers 1, 2, and 3 must be written in the cells so that each of them appears in each row and in each column. Harry started to fill in the square. Which number should he write in the cell that is marked by a question mark (?) ?

1	?	
2	1	

- A) only 1 B) only 2 C) only 3 D) 2 or 3 E) 1, 2 or 3

11. “Euro” is the currency of the European Union ($1 \text{ euro} = 100 \text{ euro-cents}$). Helga has 5 euro. She intends to buy 5 notebooks, which cost 80 euro-cents each, and some pencils, 30 euro-cents each. At most how many pencils can Helga afford to buy?

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

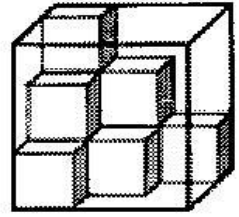
12. Basil, who is older than Peter by one year and one day, was born on January 1, 2002. What is the date of Peter’s birthday?

- A) January 2, 2003 B) January 2, 2001 C) December 31, 2000
 D) December 31, 2002 E) December 31, 2003

13. John has 400 spaghetti strands, each 15 cm long, on his lunch plate. If he joined them end to end (using sauce as glue) to form one long stand, what would be the length of his lunch?

- A) 6 km B) 60 m C) 600 cm D) 6000 mm E) 60 000 cm

14. Daniella has an aquarium in the shape of a cube with edges 3 dm each. She started arranging cubes with edges 1 dm each inside the aquarium, in the way you can see on the picture. At most how many more such cubes can Daniella put into the aquarium?



- A) 9 B) 13 C) 17 D) 21 E) 27

15. Peter wrote a one-digit number and then wrote an additional digit to its right. He added 19 to the obtained number and got 72. What number did Peter write first?

- A) 2 B) 5 C) 6 D) 7 E) 9

16. Digital clock shows the time **20:07**. What is the least time period to pass in order to see again the same four digits (in some order) on the clock? *Note: At midnight, the digital clock shows 00:00, one hour later it shows 01:00, etc.*

- A) 4 h 20 min B) 6 h 00 min C) 10 h 55 min D) 11 h 13 min. E) 24 h 00 min.

Part C: Each correct answer is worth 5 points.

17. A cube with a side length of 3 cm is painted grey and cut into smaller cubes with a side length of 1 cm each. How many of the smaller cubes will have exactly 2 faces painted?



- A) 4 B) 6 C) 8 D) 10 E) 12

18. A palindrome is a number which remains the same when its digits are written in reverse order. For example, 1331 is a palindrome. A car's odometer reads 15951. Find the least number of kilometres the car should travel for the next palindrome to appear on the odometer?

- A) 100 B) 110 C) 710 D) 900 E) 1010

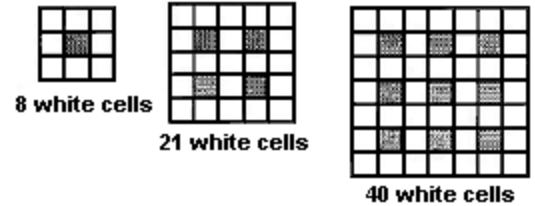
19. Romain, Fabien, Lise, Jennifer, and Adrien stand in a single row. Romain is after Lise. Fabien is before Romain and just after Jennifer. Jennifer is before Lise but she is not the first. Where is Adrien?

- A) 1st B) 2nd C) 3rd D) 4th E) 5th

20. What is the perimeter of the figure obtained from a 15 cm by 9 cm rectangle, by cutting out four identical squares with a perimeter of 8 cm each, one at each corner?

- A) 48 cm B) 40 cm C) 32 cm D) 24 cm E) 16 cm

21. The following three diagrams represent a pattern in the arrangement of the black and white cells. If the pattern continues, how many white cells will the next diagram have?



- A) 50 B) 60 C) 65 D) 70 E) 75

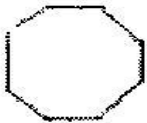
22. The seats on a children merry-go-round are numbered in the sequence 1, 2, 3, On this merry-go-round, Peter was sitting on seat #11, exactly opposite Maria, who was sitting on seat #4. How many seats are there on this merry-go-round?

- A) 13 B) 14 C) 16 D) 17 E) 22

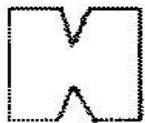
23. How many digits are needed to write down all numbers from 1 to 100?

- A) 100 B) 150 C) 190 D) 192 E) 200

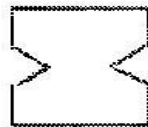
24. A square piece of paper is folded twice in such a way that the result is a square again. In the new square, one of the corners is cut out and then the paper is unfolded. Which of the following designs cannot be obtained this way?



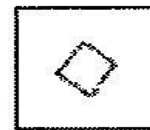
A)



B)



C)



D)

E) All of these designs can be obtained this way.

End of Problems

Bonus Problems

Bonus 1: Vanda cut a paper square with a perimeter of 20 cm into two rectangles. The perimeter of one of the rectangles was 16 cm. What was the perimeter of the second rectangle?

- A) 8 cm B) 9 cm C) 12 cm D) 14 cm E) 16 cm

Bonus 2: There were 60 birds on three trees. At some moment 6 birds flew away from the first tree, 8 birds flew away from the second tree, and 4 birds flew away from the third tree. After that, it turned out that the number of birds on each tree was the same. How many birds were there on the second tree in the beginning?

- A) 26 B) 24 C) 22 D) 21 E) 20