

# Math Kangaroo 2011 Sample Questions

## LEVELS 1 AND 2

### SAMPLE QUESTION FOR 3 POINTS

Katie's doll is wearing a dress, has two braids and is holding one flower in her hand. Which picture shows Katie's doll?



### SAMPLE QUESTION FOR 4 POINTS

In 36 years, Mark's grandmother will celebrate her 100th birthday. How old is Mark's grandmother now?

- A) 74                      B) 64                      C) 66                      D) 36

### SAMPLE QUESTION FOR 5 POINTS

Fido the Dog, Philemon the Cat and 4 monkeys together weigh 24 lbs. Fido and one monkey together weigh 11 lbs. Philemon and 2 monkeys together weigh 1 lb less than Fido and one monkey weigh together. Each of the monkeys weighs the same. How much does Philemon weigh?

- A) 3 lbs                      B) 4 lbs                      C) 5 lbs                      D) 6 lbs

# Math Kangaroo 2011 Sample Questions

## LEVELS 1 AND 2 ANSWERS

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# Math Kangaroo 2011 Sample Questions

## LEVELS 3 AND 4

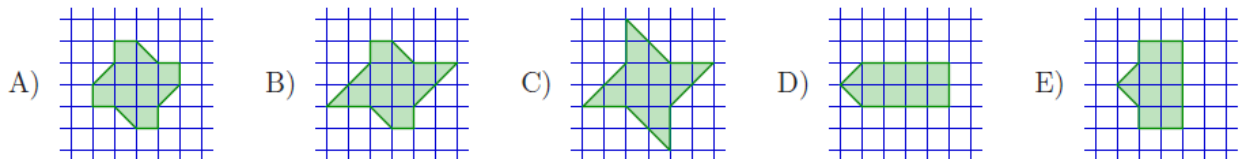
### SAMPLE QUESTION FOR 3 POINTS

Michael is painting the word KANGAROO on a poster. Each day he paints one letter. He painted the first letter on a Wednesday. What day of the week will it be when he paints the last letter?

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

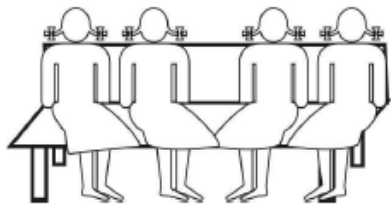
### SAMPLE QUESTION FOR 4 POINTS

Which of the figures below has the greatest area?



### SAMPLE QUESTION FOR 5 POINTS

Four friends, Masha, Sasha, Dasha and Pasha, were sitting on a bench. First Masha changed places with Dasha. Then Dasha changed places with Pasha. At the end the girls sat on the bench in the following order from left to right: Masha, Sasha, Dasha, Pasha. In what order from left to right were they sitting in the beginning?



- A) Masha, Sasha, Dasha, Pasha  
B) Masha, Dasha, Pasha, Sasha  
C) Dasha, Sasha, Pasha, Masha  
D) Sasha, Masha, Dasha, Pasha  
E) Pasha, Masha, Sasha, Dasha

# Math Kangaroo 2011 Sample Questions

## LEVELS 3 AND 4 ANSWERS

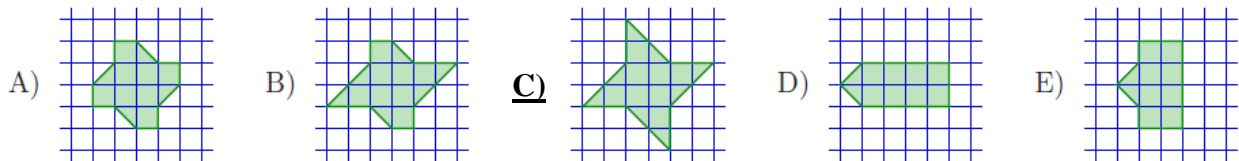
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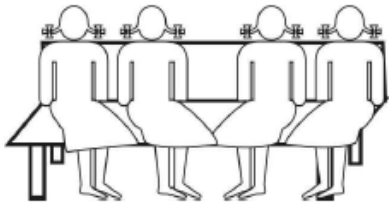
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- A) Masha, Sasha, Dasha, Pasha  
**C) Dasha, Sasha, Pasha, Masha**  
E) Pasha, Masha, Sasha, Dasha
- B) Masha, Dasha, Pasha, Sasha  
D) Sasha, Masha, Dasha, Pasha

# Math Kangaroo 2011 Sample Questions

## LEVELS 5 AND 6

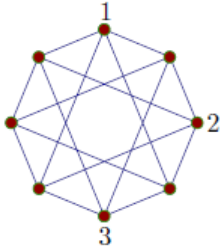
### SAMPLE QUESTION FOR 3 POINTS

Basil is writing the word KANGAROO, one letter each day. He wrote the first letter on Wednesday. On what day will he finish writing the word?

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

### SAMPLE QUESTION FOR 4 POINTS

8 points are connected with several segments as shown in the picture. Each of these points needs to be labeled with number 1, 2, 3, or 4. The numbers on each end of any given segment need to be different. Three of the points are already labeled (see the picture). How many points will be labeled with 4?



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

### SAMPLE QUESTION FOR 5 POINTS

In a certain month there were 5 Saturdays and 5 Sundays, but only 4 Fridays and 4 Mondays. In the following month there will be

- A) 5 Wednesdays.      B) 5 Thursdays.      C) 5 Fridays.      D) 5 Saturdays.      E) 5 Sundays.

# Math Kangaroo 2011 Sample Questions

## LEVELS 5 AND 6 ANSWERS

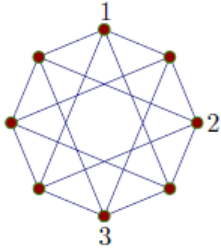
### SAMPLE QUESTION FOR 3 POINTS

Basil is writing the word KANGAROO, one letter each day. He wrote the first letter on Wednesday. On what day will he finish writing the word?

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

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# Math Kangaroo 2011 Sample Questions

## LEVELS 7 AND 8

### SAMPLE QUESTION FOR 3 POINTS

Ellie has 5 cubes and 3 tetrahedrons. How many sides do these solids have all together?

- A) 42                      B) 48                      C) 50                      D) 52                      E) 56

### SAMPLE QUESTION FOR 4 POINTS

During three consecutive games the soccer team FC Kangaroo made a total of three goals and had one goal scored against them. This soccer team won one of these three games, lost one game, and tied one game. What was the final score of the game that FC Kangaroo won?

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

### SAMPLE QUESTION FOR 5 POINTS

Inside a square with a side length equal to 7 cm there is a square with a side length equal to 3 cm. A third square with a side length equal to 5 cm intersects each of the other two squares (see illustration). The difference between the area of the black region and the sum of the areas of the shaded region is



- A)  $0 \text{ cm}^2$ .      B)  $10 \text{ cm}^2$ .      C)  $11 \text{ cm}^2$ .      D)  $15 \text{ cm}^2$ .      E) impossible to determine.

# Math Kangaroo 2011 Sample Questions

## LEVELS 7 AND 8 ANSWERS

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- A) 0 cm<sup>2</sup>.                      B) 10 cm<sup>2</sup>.                      C) 11 cm<sup>2</sup>.                      D) 15 cm<sup>2</sup>.                      E) impossible to determine.



# Math Kangaroo 2011 Sample Questions

## LEVELS 9 AND 10

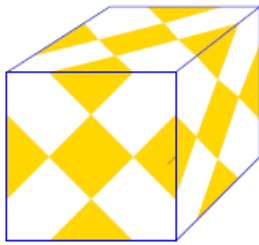
### SAMPLE QUESTION FOR 3 POINTS

A pedestrian crosswalk consists of black and white stripes each 0.5 m wide. The crosswalk begins and ends with a white stripe, and there are 10 white stripes in all. How wide is the crosswalk?

- A) 11 m      B) 10.5 m      C) 10 m      D) 9.5 m      E) 9 m

### SAMPLE QUESTION FOR 4 POINTS

A cube with side length equal to 10 cm was covered with a certain number of identical yellow squares in such a way that all the sides look identical (see illustration). What area of the cube, in square centimeters, is covered by yellow squares?



- A) 37.5      B) 150      C) 225      D) 300      E) 375

### SAMPLE QUESTION FOR 5 POINTS

Choose four edges of a cube in such a way that no two edges will share a vertex. In how many ways can this be done?

- A) 6      B) 8      C) 9      D) 12      E) 18

# Math Kangaroo 2011 Sample Questions

## LEVELS 9 AND 10 ANSWERS

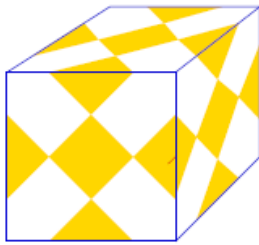
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- A) 6      B) 8      **C) 9**      D) 12      E) 18

# Math Kangaroo 2011 Sample Questions

## LEVELS 11 AND 12

### SAMPLE QUESTION FOR 3 POINTS

The difference between a positive integer and the sum of its digits is always divisible by

- A) 7.      B) 11.      C) 2.      D) 5.      E) 9.

### SAMPLE QUESTION FOR 4 POINTS

Let  $A_n$  represent the set of  $n$ -digit numbers that do not contain the digit 0. What should the value of  $n$  be so that there are as many numbers without the digit 9 in the set  $A_n$  as there are numbers with exactly one digit equal to 9 in the same set?

- A) 8      B) 9      C) 12      D) 15      E) 2011

### SAMPLE QUESTION FOR 5 POINTS

A bowl contains only red and green marbles. The probability of selecting two marbles of the same color from this bowl is equal to  $\frac{1}{2}$ . Which of the following is a possible number of marbles in this bowl?

- A) 81      B) 101      C) 1000      D) 2011      E) 10001

# Math Kangaroo 2011 Sample Questions

## LEVELS 11 AND 12 ANSWERS

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