

# Math Kangaroo 2017 Sample Questions

## LEVELS 1 AND 2

### SAMPLE QUESTION FOR 3 POINTS

In the picture there are stars with 5 points, stars with 6 points and stars with 7 points. How many stars that have only 5 points are there?



- A) 2      B) 3      C) 4      D) 5      E) 9

### SAMPLE QUESTION FOR 4 POINTS

In which picture are there twice as many apples as carrots and twice as many carrots as pears?



### SAMPLE QUESTION FOR 5 POINTS

In Old McDonald's Barn there is one horse, two cows and three pigs. How many more cows does Old McDonald's Barn need so that the number of all the animals is twice the number of cows?



- A) 0      B) 1      C) 2      D) 3      E) 4

# Math Kangaroo 2017 Sample Questions

## LEVELS 1 AND 2 ANSWERS

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# Math Kangaroo 2017 Sample Questions

## LEVELS 3 AND 4

### SAMPLE QUESTION FOR 3 POINTS

John looks out the window. He sees half of the kangaroos in the park (see picture). How many kangaroos are there in the park?



- A) 12      B) 14      C) 16      D) 18      E) 20

### SAMPLE QUESTION FOR 4 POINTS

David wants to prepare a meal with 5 dishes using a stove with only 2 burners. The times needed to cook the 5 dishes are 40 min, 15 min, 35 min, 10 min and 45 min. What is the shortest time in which he can do it? (He may only remove a dish from the stove when it is done cooking.)

- A) 60 min      B) 70 min      C) 75 min      D) 80 min      E) 85 min

### SAMPLE QUESTION FOR 5 POINTS

Each of ten bags contains a different number of pieces of candy. The number of pieces of candy in each bag ranges from 1 to 10. Each of five boys took two bags of candy. Alex got 5 pieces of candy, Bob got 7 pieces, Charles got 9 pieces, and Dennis got 15 pieces. How many pieces of candy did Eric get?

- A) 9      B) 11      C) 13      D) 17      E) 19

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# Math Kangaroo 2017 Sample Questions

## LEVELS 5 AND 6

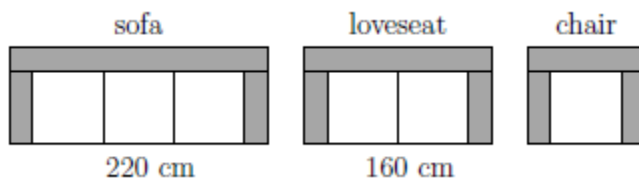
### SAMPLE QUESTION FOR 3 POINTS

A special die has a number on each face. The sums of the numbers on opposite faces are all equal. Five of the numbers are 5, 6, 9, 11 and 14. What number is on the sixth face?

- A) 4      B) 7      C) 8      D) 13      E) 15

### SAMPLE QUESTION FOR 4 POINTS

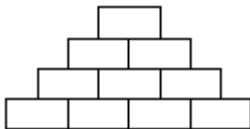
The Modern Furniture store is selling sofas, loveseats, and chairs made from identical modular pieces as shown in the picture. Including the armrests, the width of the sofa is 220 cm and the width of the loveseat is 160 cm. What is the width of the chair?



- A) 60 cm      B) 80 cm      C) 90 cm      D) 100 cm      E) 120 cm

### SAMPLE QUESTION FOR 5 POINTS

John wants to write a natural number in each box in the diagram in such a way that each number above the bottom row is the sum of the two numbers in the boxes immediately underneath. What is the largest number of odd numbers that John can write?



- A) 4      B) 5      C) 6      D) 7      E) 8

# Math Kangaroo 2017 Sample Questions

## LEVELS 5 AND 6 ANSWERS

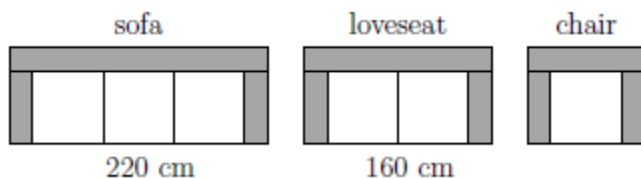
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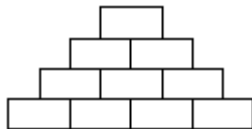
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# Math Kangaroo 2017 Sample Questions

## LEVELS 7 AND 8

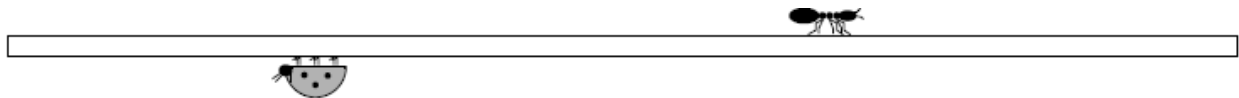
### SAMPLE QUESTION FOR 3 POINTS

A group of girls stands in a circle. Xena is the fourth to the left from Yana and the seventh to the right from Yana. How many girls are in the group?

- A) 9      B) 10      C) 11      D) 12      E) 13

### SAMPLE QUESTION FOR 4 POINTS

Annie the Ant started at the left end of a pole and crawled  $\frac{2}{3}$  of its length. Bob the Beetle started at the right end of the same pole and crawled  $\frac{3}{4}$  of its length. What fraction of the length of the pole are Annie and Bob now apart?



- A)  $\frac{3}{8}$       B)  $\frac{1}{12}$       C)  $\frac{5}{7}$       D)  $\frac{1}{2}$       E)  $\frac{5}{12}$

### SAMPLE QUESTION FOR 5 POINTS

Ten kangaroos stood in a line as shown in the diagram. At some point, two kangaroos standing side by side and facing each other exchanged places by jumping past each other. This was repeated until no further jumps were possible. How many exchanges were made?



- A) 15      B) 16      C) 18      D) 20      E) 21

# Math Kangaroo 2017 Sample Questions

## LEVELS 7 AND 8 ANSWERS

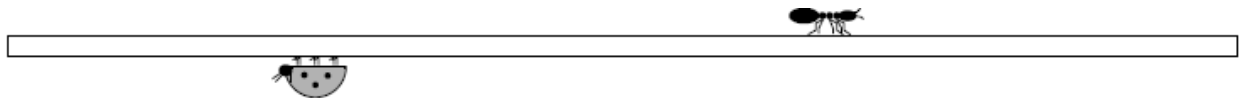
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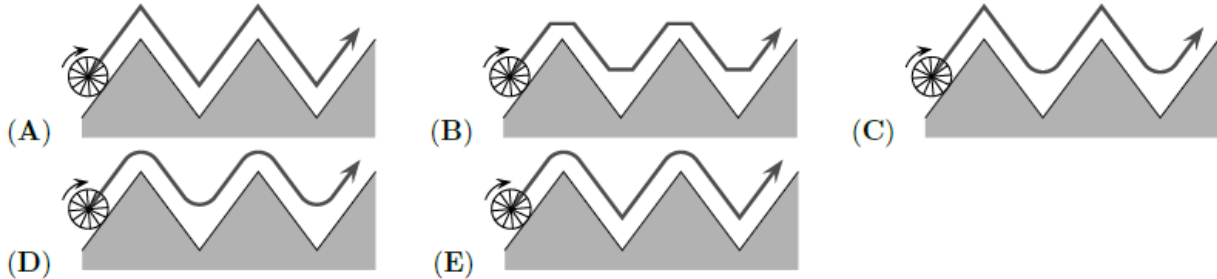


# Math Kangaroo 2017 Sample Questions

## LEVELS 9 AND 10

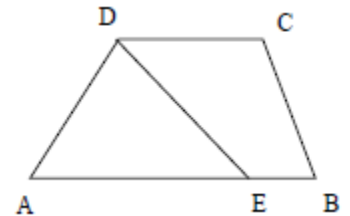
### SAMPLE QUESTION FOR 3 POINTS

Which of the following pictures shows the path of the center of the wheel when the wheel rolls along the zig-zag line shown?



### SAMPLE QUESTION FOR 4 POINTS

$ABCD$  is a trapezoid with side  $AB$  parallel to  $CD$ , where  $AB = 50$  and  $CD = 20$ .  $E$  is a point on side  $AB$  with the property that the segment  $DE$  divides the given trapezoid into two parts of equal area (see figure). Calculate the length  $AE$ .



- A) 25      B) 30      C) 35      D) 40      E) 45

### SAMPLE QUESTION FOR 5 POINTS

There are 4 children of different integer ages under 18. The product of their ages is 882. What is the sum of their ages?

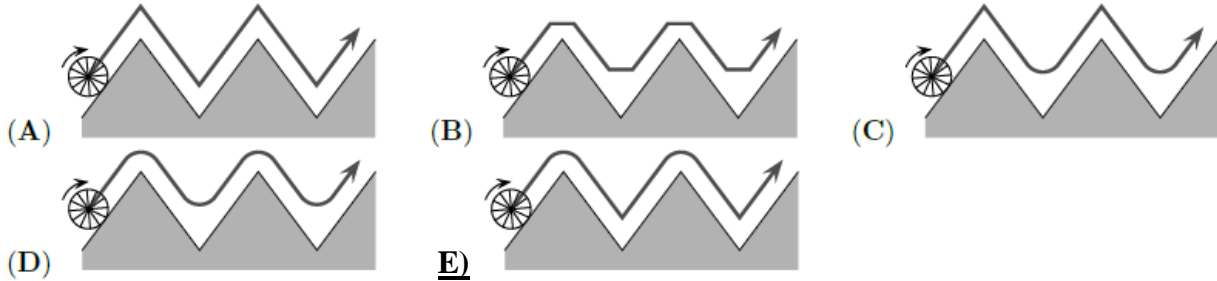
- A) 23      B) 25      C) 27      D) 31      E) 33

# Math Kangaroo 2017 Sample Questions

## LEVELS 9 AND 10 ANSWERS

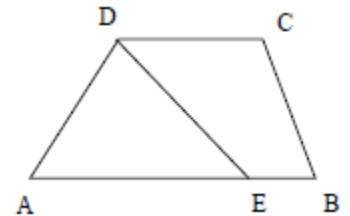
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# Math Kangaroo 2017 Sample Questions

## LEVELS 11 AND 12

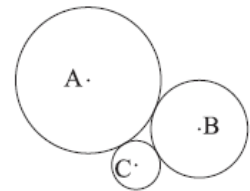
### SAMPLE QUESTION FOR 3 POINTS

Ben likes to play with his H0-model railroad. He modeled some things in the H0-ratio of 1:87, even a 2 cm high model of his brother. How tall is Ben's brother?

- A) 1.74 m    B) 1.62 m    C) 1.86 m    D) 1.94 m    E) 1.70 m

### SAMPLE QUESTION FOR 4 POINTS

Three mutually externally tangent circles with centers A, B, and C have the radii of 3, 2, and 1, respectively. What is the area of the triangle ABC?



- A) 6            B)  $4\sqrt{3}$             C)  $3\sqrt{2}$             D) 9            E)  $2\sqrt{6}$

### SAMPLE QUESTION FOR 5 POINTS

The sum of the lengths of the three sides of a right triangle is equal to 18 and the sum of the squares of the lengths of the three sides is equal to 128. What is the area of the triangle?

- A) 18            B) 16            C) 12            D) 10            E) 9

# Math Kangaroo 2017 Sample Questions

## LEVELS 11 AND 12 ANSWERS

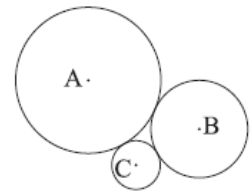
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