

Math Kangaroo 2010 Sample Questions

LEVELS 1 AND 2

SAMPLE QUESTION FOR 3 POINTS

Dominic put two teddy bears, one car and two balls on his shelf. Which of the pictures below shows his shelf?



SAMPLE QUESTION FOR 4 POINTS

13. There were 9 four-person tables in the room where Greg had his birthday party. When Greg and all his guests sat down, there were still 7 empty seats. How many guests came to Greg's party?

- A) 29 B) 28 C) 27 D) 25

SAMPLE QUESTION FOR 5 POINTS

A dog, a cat and a monkey together weigh 12 pounds. A cat and 2 monkeys weigh 10 pounds. A dog and 3 monkeys together weigh 2 pounds more than a cat, a dog and one monkey. How much does a cat weigh?

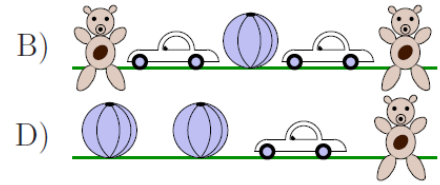
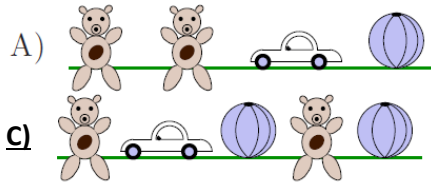
- A) 3 pounds B) 4 pounds C) 5 pounds D) 6 pounds

Math Kangaroo 2010 Sample Questions

LEVELS 1 AND 2 ANSWERS

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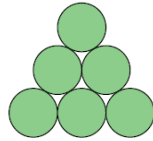
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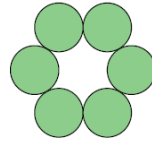
LEVELS 3 AND 4

SAMPLE QUESTION FOR 3 POINTS

The figure shown in Picture 1 was made out of six identical coins. What is the smallest number of coins that we need to move to make the figure shown in Picture 2?



Picture 1



Picture 2

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

SAMPLE QUESTION FOR 4 POINTS

Matthew and Clara live in a skyscraper. Clara lives 12 floors above Matthew. One day Matthew went to visit Clara, and he took the stairs up from his apartment to Clara's apartment. Half-way up he was on the 8th floor. On what floor does Clara live?

- A) 12 B) 14 C) 16 D) 20 E) 24

SAMPLE QUESTION FOR 5 POINTS

Anna, Beata and Jack go to the same school. One day the librarian said to them, "Guess how many books we have in the school library." Anna said 2010, Beata said 1998, and Jack said 2015. It turned out that the number of books in the library differed from the numbers given by the children by 12, 7 and 5 (these numbers are not necessarily in the order they made their guesses). How many books are there in their school library?

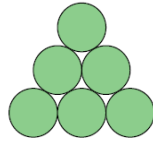
- A) 2005 B) 2008 C) 2003 D) 2020 E) 2022

Math Kangaroo 2010 Sample Questions

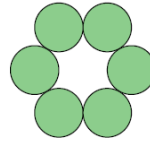
LEVELS 3 AND 4 ANSWERS

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Picture 2

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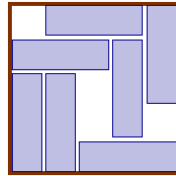
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Math Kangaroo 2010 Sample Questions

LEVELS 5 AND 6

SAMPLE QUESTION FOR 3 POINTS

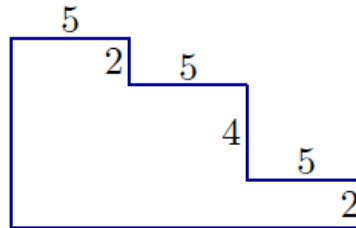
Seven identical candy bars were arranged on the bottom of a square box. It is possible to slide the candy bars so that there will be room for one more candy bar. What is the least number of candy bars that must be moved to make room for one more candy bar?



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

SAMPLE QUESTION FOR 4 POINTS

Each pair of adjacent sides of the figure shown in the picture is perpendicular. What is the perimeter of this figure?



- A) $3 \times 5 + 4 \times 2$
B) $3 \times 5 + 8 \times 2$
C) $6 \times 5 + 4 \times 2$
D) $6 \times 5 + 6 \times 2$
E) $6 \times 5 + 8 \times 2$

SAMPLE QUESTION FOR 5 POINTS

Adam and Tom are walking in the same direction around a circular table and counting chairs. They begin their counts with different chairs. Tom's twentieth chair is Adam's fourth chair, while Tom's tenth chair is Adam's forty-sixth chair. How many chairs are there at the table?

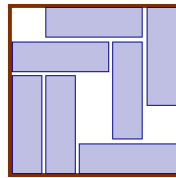
- A) 50 B) 52 C) 56 D) 60 E) 80

Math Kangaroo 2010 Sample Questions

LEVELS 5 AND 6 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

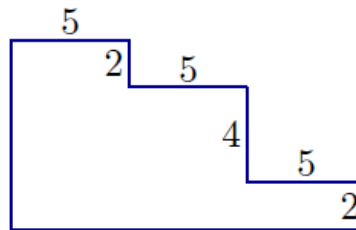
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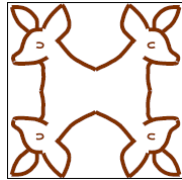
- A) 50 **B) 52** C) 56 D) 60 E) 80

Math Kangaroo 2010 Sample Questions

LEVELS 7 AND 8

SAMPLE QUESTION FOR 3 POINTS

How many axes of symmetry does the figure have?



- A) 0 B) 1 C) 2 D) 4 E) infinitely many

SAMPLE QUESTION FOR 4 POINTS

A lumberjack chopped wood, each time cutting a piece of wood in half. When he finished he observed that after making 53 cuts he had 72 pieces of wood. With how many pieces did he begin?

- A) 17 B) 18 C) 19 D) 20 E) 21

SAMPLE QUESTION FOR 5 POINTS

Sides AB and AC of the triangle ABC are the diameters of two circles. These circles intersect at points A and P. Then, point P is necessarily

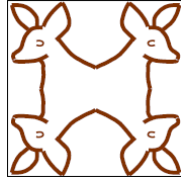
- A) the center of a circle inscribed in triangle ABC.
B) the midpoint of side BC.
C) inside triangle ABC.
D) outside triangle ABC.
E) the point of intersection of the height of triangle ABC at angle A with side BC.

Math Kangaroo 2010 Sample Questions

LEVELS 7 AND 8 ANSWERS

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B) the midpoint of side BC.
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E) the point of intersection of the height of triangle ABC at angle A with side BC.

Math Kangaroo 2010 Sample Questions

LEVELS 9 AND 10

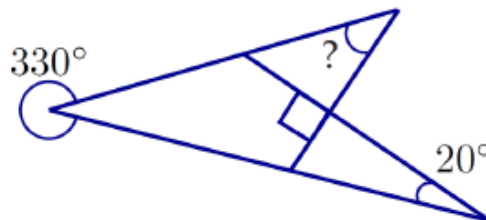
SAMPLE QUESTION FOR 3 POINTS

It is now the year 2010. During yesterday's math class the teacher said that it was his birthday and that the product of his age and his father's age is 2010. In what year was the teacher born?

- A) 1943 B) 1953 C) 1980 D) 1981 E) 1995

SAMPLE QUESTION FOR 4 POINTS

What is the measure of the angle indicated with the question mark?



- A) 50° B) 40° C) 30° D) 20° E) 10°

SAMPLE QUESTION FOR 5 POINTS

How many three digit numbers have the property that the middle digit is the arithmetic mean of the other two digits?

- A) 50 B) 25 C) 29 D) 41 E) 45

Math Kangaroo 2010 Sample Questions

LEVELS 9 AND 10 ANSWERS

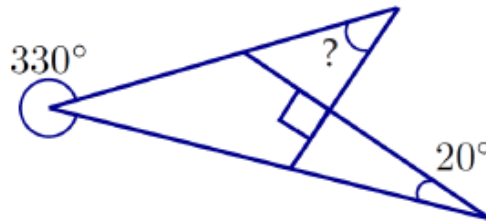
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Math Kangaroo 2010 Sample Questions

LEVELS 11 AND 12

SAMPLE QUESTION FOR 3 POINTS

Which of the following could be the number of edges of a prism?

- A) 100 B) 200 C) 2008 D) 2009 E) 2010

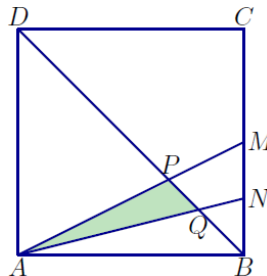
SAMPLE QUESTION FOR 4 POINTS

A bag contains blue, green, and red marbles. It is known that if five marbles are drawn at random, then at least two will be red and at least three will be of the same color. How many of the marbles are blue?

- A) 1 B) 2 C) 3 D) 4 E) More information is needed.

SAMPLE QUESTION FOR 5 POINTS

Square ABCD has a side length of 1. Point M is the midpoint of side BC, N is the midpoint of segment BM, and P and Q are the points of intersection of diagonal BD with segments AM and AN respectively. What is the area of the shaded triangle AQP?



- A) $\frac{1}{4}$ B) $\frac{1}{5}$ C) $\frac{1}{6}$ D) $\frac{1}{12}$ E) $\frac{1}{15}$

Math Kangaroo 2010 Sample Questions

LEVELS 11 AND 12 ANSWERS

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Which of the following could be the number of edges of a prism?

- A) 100 B) 200 C) 2008 D) 2009 **E) 2010**

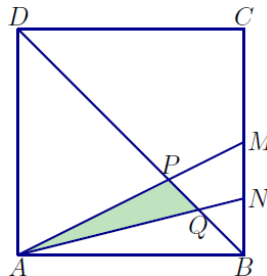
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