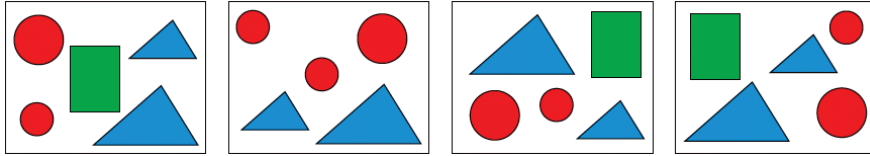# Math Kangaroo 2015 Sample Questions

LEVELS 1 AND 2

SAMPLE QUESTION FOR 3 POINTS

Look closely at these four pictures.

Which figure is missing from one of the pictures?

A) ⬤ B) ⬤ C) ▲ D) ◼ E) ▲

SAMPLE QUESTION FOR 4 POINTS

Marko has 9 pieces of candy and Tomo has 17 pieces of candy. How many pieces of candy does Tomo need to give to Marko so that each boy has the same number of pieces of candy?

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

SAMPLE QUESTION FOR 5 POINTS

A ship was attacked by pirates. One by one the pirates climbed a rope to get to the ship. The pirate captain was the eighth pirate to climb, and there were as many pirates in front of him as behind him. How many pirates climbed the rope?
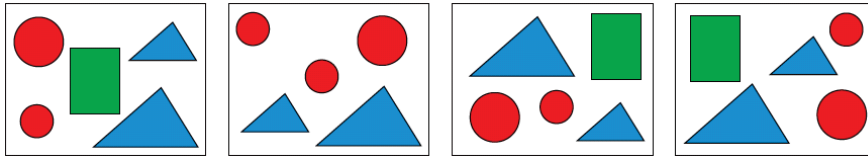
A) 7   B) 8   C) 12   D) 15   E) 16

Math Kangaroo 2015 Sample Questions

LEVELS 1 AND 2 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

Look closely at these four pictures.

Which figure is missing from one of the pictures?

A) ⬤   B) ⬤   C) ▲   **D)** ◼   E) ▲

SAMPLE QUESTION FOR 4 POINTS

Marko has 9 pieces of candy and Tomo has 17 pieces of candy. How many pieces of candy does Tomo need to give to Marko so that each boy has the same number of pieces of candy?

A) 2   B) 3   **C) 4**   D) 5   E) 6
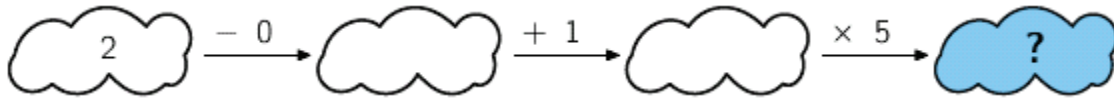
SAMPLE QUESTION FOR 5 POINTS

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A) 7   B) 8   C) 12   **D) 15**   E) 16
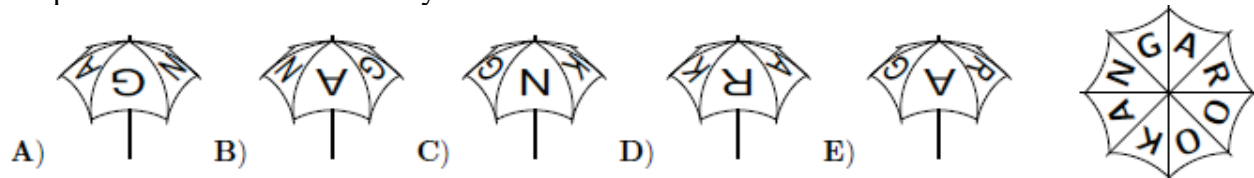
Math Kangaroo 2015 Sample Questions

LEVELS 3 AND 4

SAMPLE QUESTION FOR 3 POINTS

A) 6   B) 7   C) 8   D) 10   E) 15

SAMPLE QUESTION FOR 4 POINTS

My umbrella has KANGAROO written on top. It is shown in the picture on the right. Which of the pictures below also shows my umbrella?
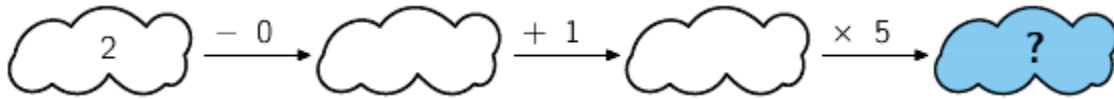

SAMPLE QUESTION FOR 5 POINTS

We can fill a certain barrel with water if we use water from 6 small pitchers, 3 medium pitchers and one large pitcher, or from 2 small pitchers, 1 medium pitcher and 3 large pitchers. If we use only large pitchers of water, how many of them do we need to fill the barrel?

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

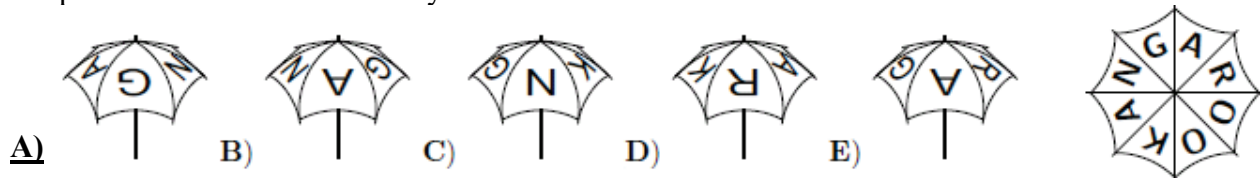# Math Kangaroo 2015 Sample Questions

LEVELS 3 AND 4 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

A) 6   B) 7   C) 8   D) 10   **E) 15**

SAMPLE QUESTION FOR 4 POINTS

My umbrella has KANGAROO written on top. It is shown in the picture on the right. Which of the pictures below also shows my umbrella?

A)   B)   C)   D)   E)

SAMPLE QUESTION FOR 5 POINTS

We can fill a certain barrel with water if we use water from 6 small pitchers, 3 medium pitchers and one large pitcher, or from 2 small pitchers, 1 medium pitcher and 3 large pitchers. If we use only large pitchers of water, how many of them do we need to fill the barrel?
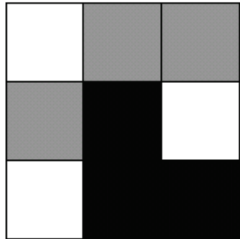
A) 4   B) 5   C) 6   D) 7   E) 8

Math Kangaroo 2015 Sample Questions

LEVELS 5 AND 6

SAMPLE QUESTION FOR 3 POINTS

Sam painted the 9 squares as shown in the figure below using the colors black, white, and gray. At least how many squares does he need to repaint so that no two squares with a common side are the same color?
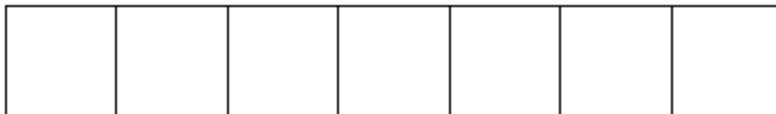

A) 2   B) 3   C) 4   D) 5   E) 6

SAMPLE QUESTION FOR 4 POINTS

A student wrote down a natural number. When she divided the number by 9, the remainder was 7. What is the remainder when twice that number is divided by 9?

A) 1   B) 2   C) 5   D) 6   E) 7

SAMPLE QUESTION FOR 5 POINTS

In how many ways can you color 3 different cells in the strip shown below so that no 2 neighboring cells are colored?

A) 6   B) 7   C) 8   D) 9   E) 10

Math Kangaroo 2015 Sample Questions

LEVELS 5 AND 6 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

Sam painted the 9 squares as shown in the figure below using the colors black, white, and gray. At least how many squares does he need to repaint so that no two squares with a common side are the same color?

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

SAMPLE QUESTION FOR 4 POINTS

A student wrote down a natural number. When she divided the number by 9, the remainder was 7. What is the remainder when twice that number is divided by 9?

A) 1   B) 2   **C) 5**   D) 6   E) 7

SAMPLE QUESTION FOR 5 POINTS

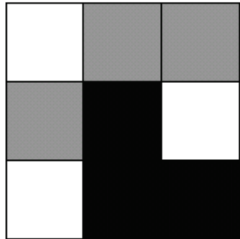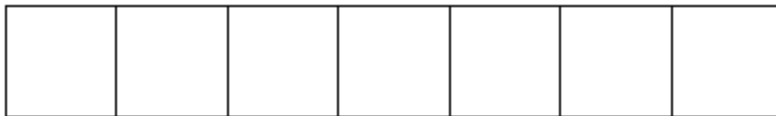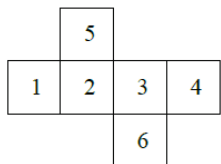In how many ways can you color 3 different cells in the strip shown below so that no 2 neighboring cells are colored?

A) 7   B) 8   C) 9   D) 10   **E) 10**

Math Kangaroo 2015 Sample Questions

LEVELS 7 AND 8

SAMPLE QUESTION FOR 3 POINTS

The net of a cube with numbered faces is shown in the diagram. Sasha correctly adds the numbers on opposite faces of this cube. What three totals does Sasha get?

A) 4, 6, 11   B) 4, 5, 12   C) 5, 6, 10   D) 5, 7, 9   E) 5, 8, 8

SAMPLE QUESTION FOR 4 POINTS

A bush has 10 branches. Each branch has either 5 leaves only or 2 leaves and 1 flower. Which of the following could be the total number of leaves the bush has?

A) 45   B) 39   C) 37   D) 31   E) None of A) to D).

SAMPLE QUESTION FOR 5 POINTS

In a group of kangaroos, the two lightest kangaroos weigh 25% of the total weight of the group. The three heaviest kangaroos weigh 60% of the total weight. How many kangaroos are in the group?
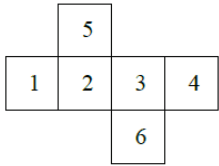
A) 6   B) 7   C) 8   D) 15   E) 20

Math Kangaroo 2015 Sample Questions

LEVELS 7 AND 8 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

The net of a cube with numbered faces is shown in the diagram. Sasha correctly adds the numbers on opposite faces of this cube. What three totals does Sasha get?

```
    5
1   2   3   4
    6
```

A) 4, 6, 11   B) 4, 5, 12   C) 5, 6, 10   D) 5, 7, 9   E) 5, 8, 8

SAMPLE QUESTION FOR 4 POINTS

A bush has 10 branches. Each branch has either 5 leaves only or 2 leaves and 1 flower. Which of the following could be the total number of leaves the bush has?

A) 45   B) 39   C) 37   D) 31   **E) None of A) to D)**.

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A) 6   B) 7   C) 8   D) 15   E) 20
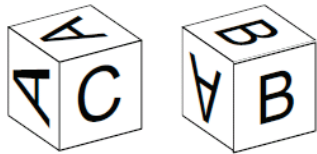
Math Kangaroo 2015 Sample Questions

LEVELS 9 AND 10

SAMPLE QUESTION FOR 3 POINTS

What is the ones digit of the number $2015^2 + 2015^0 + 2015^1 + 2015^5$?

A) 1   B) 5   C) 6   D) 7   E) 9

SAMPLE QUESTION FOR 4 POINTS

One of the letters A, B, or C, appears on each of the faces of a certain die. The picture shows this die in two different positions. On how many faces of this die does the letter A appear?

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

SAMPLE QUESTION FOR 5 POINTS

Petra has three different dictionaries and two different novels on a shelf. How many ways are there to arrange the books if she wants to keep the dictionaries together and the novels together?

A) 12   B) 24   C) 30   D) 60   E) 120

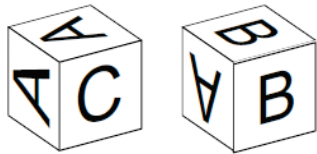# Math Kangaroo 2015 Sample Questions

LEVELS 9 AND 10 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

What is the ones digit of the number $2015^2 + 2015^0 + 2015^1 + 2015^5$?

A) 1   B) 5   **C) 6**   D) 7   E) 9

SAMPLE QUESTION FOR 4 POINTS

One of the letters A, B, or C, appears on each of the faces of a certain die. The picture shows this die in two different positions. On how many faces of this die does the letter A appear?

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

SAMPLE QUESTION FOR 5 POINTS

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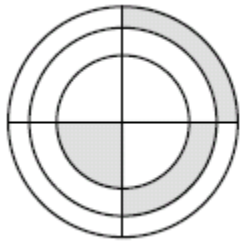
Math Kangaroo 2015 Sample Questions

LEVELS 11 AND 12

SAMPLE QUESTION FOR 3 POINTS

How many solutions does the equation $2^{2x} = 4^{x+1}$ have?

A) 0 B) Infinitely many C) 2 D) 1 E) 3

SAMPLE QUESTION FOR 4 POINTS

In the figure below, there are three concentric circles and two perpendicular diameters. If the three shaded figures have equal areas and the radius of the smallest circle is 1, what is the product of the three radii?

A) $\sqrt{6}$ B) 3 C) $\frac{3\sqrt{3}}{2}$ D) $2\sqrt{2}$ E) 6

SAMPLE QUESTION FOR 5 POINTS

When reading the following statements from the left to the right, what is the first statement that is true?

A) C) is true.
B) A) is true.
C) E) is false.
D) B) is false.
E) $1 + 1 = 2$

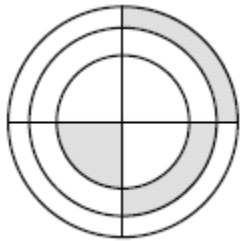# Math Kangaroo 2015 Sample Questions

LEVELS 11 AND 12 ANSWERS

SAMPLE QUESTION FOR 3 POINTS

How many solutions does the equation $2^{2x} = 4^{x+1}$ have?

A) 0   B) Infinitely many   C) 2   D) 1   E) 3

SAMPLE QUESTION FOR 4 POINTS

In the figure below, there are three concentric circles and two perpendicular diameters. If the three shaded figures have equal areas and the radius of the smallest circle is 1, what is the product of the three radii?

A) $\sqrt{6}$ B) 3   C) $\frac{3\sqrt{3}}{2}$ D) $2\sqrt{2}$ E) 6

SAMPLE QUESTION FOR 5 POINTS

When reading the following statements from the left to the right, what is the first statement that is true?

A) C) is true.
B) A) is true.
C) E) is false.
D) B) is false.
E) $1 + 1 = 2$