

Markhor Junior Contest ® 2024

Elementary Level (Class V & VI)

Mathematics

Time Allowed 60 Minutes

There are 19 problems, graded as follows:

Questions 1-5 are 1 point each,

Questions 6-10 are 2 points each,

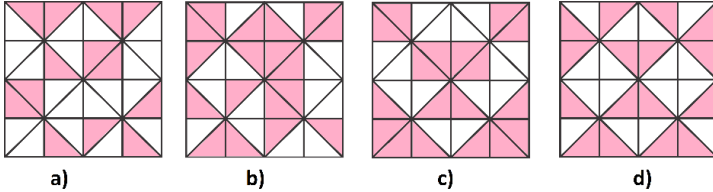
Questions 11-15 are 3 points each,

Questions 16-19 are 5 points each.

- 1. The local art club is decorating a wall mural with the slogan "MARKHOR JUNIOR CONTEST." They want each letter to be a unique color, but all the same letters (like the M's or the O's) should be the same shade. How many different colors will they need for the project?**
 - a) 14
 - b) 16
 - c) 20
 - d) 22
- 2. In a specific location in Antarctica, the temperature drops to -40 degrees Celsius. During the summer, it rises to 3 degrees Celsius, and in winter, it drops to 1 degree Celsius. After how many years will the ice start melting?**
 - a) 20
 - b) 40
 - c) 30
 - d) 10

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3. Among the diagrams, can you identify the one where the colored area is exactly equal to the white area?



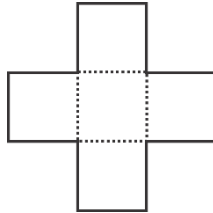
4. Gabriela, a passionate gardener, is excited to plant some new flowers. She's looking at seed packets at the nursery. Buying 6 seed packets together costs \$20 more than buying just one seed packet, how much does one seed packet cost?
- a) 4
 - b) 5
 - c) 6
 - d) 10
5. The product of three consecutive even numbers is always divisible by:
- a) 2 only
 - b) 3 only
 - c) 4 only
 - d) All above
6. Omar, a resourceful camp chef, is planning meals for a group of hungry campers. He has limited ingredients but wants to create delicious and filling snacks. He knows that

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one granola bar gives 200 calories and one apple provides 90 calories. If Omar combines one granola bar and one apple to make a snack for two campers, what will be the total calories from this snack?

- a) 290
 - b) 145
 - c) 580
 - d) 190
7. A country has a cross-shaped flag consisting of 5 identical squares, as shown below. If the area of the flag is 1.25 square feet, what is its perimeter, in feet?

- a) 0.5 feet
- b) 1.5 feet
- c) 6 feet
- d) 4 feet



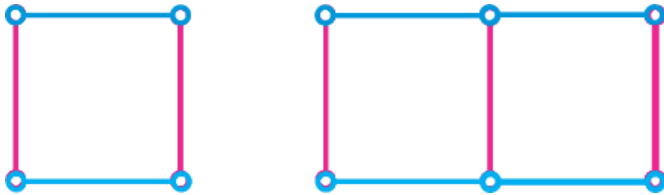
8. Ms. Lee's art class is planning a collaborative mural project. There are twice as many students who prefer cool colors (blue, green, etc.) compared to students who prefer warm colors (red, orange, etc.). Including Ms. Lee herself, which of the following could be the total number of people involved in the mural project?
- a) 31
 - b) 36
 - c) 24
 - d) 20

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9. Markhor, a wise old mountain goat, teaches a nature class high in the Himalayas. His classroom bustles with curious creatures: 5 cubs, 8 energetic young ducklings, 10 cute chickens, and some shy lambs. Together, these young animals (including Markhor) have a total of 80 legs. Can you figure out how many shy lambs are learning from Mr. Markhor?

- a) 8
- b) 6
- c) 4
- d) 5

10. To form one square, we need 2 blue (horizontal) lines and 2 red (vertical) lines (as shown in the diagram). For two squares, we need 4 blue (horizontal) lines and 3 red (vertical) lines (see the diagram). Now, to form a larger 4x4 square made up of smaller squares, how many red and blue lines will be needed?



- a) 10 red, 11 blue
- b) 17 red, 18 blue
- c) 20 red, 20 blue
- d) 19 red, 19 blue

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- 11. Farmer Omar's prize ducks are hatching in 2024, Omar eagerly waits for his ducks to hatch. He knows they take about 28 days to hatch. On March 15th, 2024, Omar discovers adorable ducklings in the nest! when did Omar's ducks most likely hatch?**
- a) February 14, 2024
 - b) February 16, 2024
 - c) February 18, 2024
 - d) February 20, 2024
- 12. When it is 4 o'clock in the afternoon in Karachi, it is 3 o'clock in the afternoon in Dubai and it is 6 o'clock in the morning on the same day in New York. Ali went to bed in New York at 10 o'clock yesterday evening. What was the time in Dubai at that moment?**
- a) 7:00 AM
 - b) 11:00 PM
 - c) 8:00 PM
 - d) 10:00 PM
- 13. In a new game, positive integers are painted red, blue, or yellow: 1 is red, 2 is blue, 3 is yellow, 4 is red, 5 is blue, 6 is yellow, and so forth. Sam adds a red number and a blue number together. What color might the resulting number be?**
- a) Red
 - b) Blue
 - c) Yellow
 - d) It can be any color

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14. Arham is mixing colorful candies for a party. He has three types of candies: red, blue, and green. The red and blue candies are mixed in a ratio of 1 red to 2 blue. The blue and green candies are mixed in a ratio of 2 blue to 3 green. Knowing the ratios of the candy mixes, can we definitively determine which color (red, blue, or green) has the most candies in the final mix.

- a) There is more red candy.
- b) There is more blue candy.
- c) There is more green candy.
- d) We cannot determine.

15. At a school event, fifteen students attended. Each student was either 10, 11, 12, 13, 14, or 15 years old, with at least one student of each age. Five of them were 10 years old. The most common age among them was 13 years old. What was the average age of the fifteen students?

- a) 11
- b) 12
- c) 13
- d) 14

16. Nadia and Omar are captains on opposing teams for a math competition. Each captain receives a secret code that consists of a consecutive integer. Nadia announces: "My number is an odd factor of 30."

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What is Omar's code number?

- a) 3
- b) 6
- c) 10
- d) 15

17. Max wants to create two three-digit numbers using the digits 9, 8, 7, 6, 5, and 4, without repeating any digit. He then adds these two numbers together. What is the highest possible sum Max can achieve?

- a) 1839
- b) 1641
- c) 1833
- d) 1933

18. A scientist, Dr. Anya, is working on a new invention. She has a specific mathematical operation that involves an unknown starting number. Here's the operation:

Square the starting number,

Add 1 to the result, multiply the result by 10,

Add 6 to the result, and finally, multiply the result by 4. Knowing the mathematical

operation and the final answer 2024. What was the unknown starting number that Dr. Anya used?

- a) 6
- b) 7
- c) 8
- d) 9

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- 19. You have a rectangular paper sheet measuring 240 mm by 108 mm. By cutting the sheet along a single straight line, you create two parts, one of which becomes a square. You repeat this process with each remaining non-square part of the sheet. How many squares will you get in total?**
- a) 8
 - b) 180
 - c) 9
 - d) 20