



# RAMC 2022

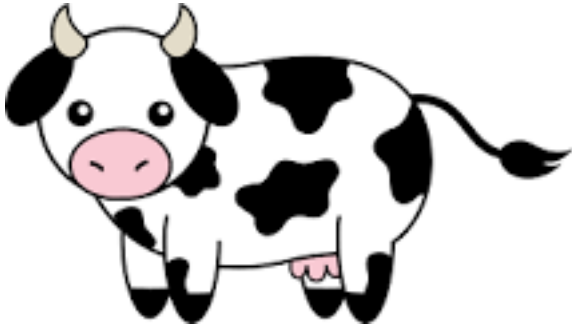
## Elementary I Individual Round

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- **SCORING:** The first 10 questions are worth 1 point each, and the last 5 questions are worth 2 points each.
- This round contains 15 questions to be solved in 45 minutes. Problems towards the end tend to be more difficult than problems toward the beginning.
- No computational aids are permitted other than scratch paper, graph paper, and a pen/pencil. No calculators of any kind are allowed.
- All answers must be in a reasonably simplified form.
- Fill out your information, and sign/initial the honor code on the answer sheet provided.
- If you believe there is an error on the test, submit a challenge to the proctors. Please include your name, level (Elem I/II, MS, HS), and explanation of the problem and your solution.

Do not flip the page until the proctor begins the round!

1. Farmer John is trying to sort his cows. He is sorting them from the youngest cow to the oldest cow. His cows are Annabelle, Bessie, Certie, Daisy, and Elsie. Bessie is 5, Elsie is 17, Daisy is 15, Certie is 14, and Annabelle is 8. How many cows are younger than Certie?



2. If a pencil and an eraser total two dollars, and a pencil and two erasers total three dollars, how many dollars does a pencil cost?
3. James is building a staircase using bricks. If it takes him 1 brick to build 1 step, 3 bricks to build 2 steps, and 6 bricks to build 3 steps, How many blocks will it take him to build 7 steps?
4. A full cooler of drinks and ice weighs 10 pounds in total. The empty cooler weighs 2 pounds, and the ice inside weighs  $2\frac{1}{2}$  pounds. If the weights of the drinks inside can be expressed as  $a\frac{b}{c}$  pounds, what is  $a + b + c$ ?
5. A conservation effort is planting trees in a recently developed area. They want to plant more than 2000 trees. On day 1, they successfully planted 100 trees. Each day after that, the number of planted trees doubled from the amount of the previous day. On which day do they reach their goal?
6. Jimmy has some pizzas. He divides his pizzas into four equal stacks. He then splits each stack into 2 smaller stacks. After that, he removes 2 pizzas from each stack. Each of the stacks now has 4 pizzas. How many pizzas did Jimmy start with?
7. Andrew has 20 watermelons. He gives half of the watermelons to his friend Felix, and gives half of his remaining watermelons to Golden. After that, he cuts each of his remaining watermelons into 8 slices. How many slices of watermelon does Andrew have?
8. Nathan was born on December 8th, 2021. How many days old was Nathan on July 31<sup>st</sup>, 2022?
9. Kurt is fishing in crystal clear waters. He is going to sell the different types of fish. He catches 4 red fish, 2 blue fish, 13 green fish, and 1 eel. He can get \$2 for red fish, \$5 for blue fish, \$0.50 for green fish, and \$20 for an eel. How much money would Kurt make, if he sold all of the fish, in dollars?

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10. Jeff has 6 medium sized piles of cars. He takes those piles and splits them into 3 smaller piles. Then he splits the small piles into 4 tiny piles. Finally he gives each friend 2 cars from each tiny pile. He is left with 3 cars in each tiny pile. How many cars did he have at the start, if any two piles of the same size have the same number of cars?
  11. Frank has purchased a metal detector and is trying to find trinkets. He counts every single trinket he finds, but if the trinket is broken, Frank will count the broken one as  $\frac{1}{2}$  a trinket. Frank finds a total of  $10\frac{1}{2}$  trinkets in a week. If Frank finds the same amount of trinkets every day, then what is the total amount of trinkets Frank has found by the third day of the week?
  12. A river cruise company has 2 boats. Six people want to ride the boat today. If each boat must contain at least 1 person, how many different combinations of people can be put on the boats?
  13. A banana and an orange cost 25 dollars total. Three bananas and two oranges total 65 dollars. How much does the orange cost?
  14. Garfield eats one plate of lasagna on the first day, 2 plate of lasagna on the second, 3 plates on the third, and so on. After 24 days, how many plates of lasagna did Garfield eat in total?
  15. Billy is carrying a lunch basket, which has 2 sandwiches, 8 pickles, 5 crackers, and 7 carrots. If Billy reaches into his basket and blindly takes two items at the same time, what is the chance that he will get a carrot and a sandwich? Assume all items are different from each other.