

1. Aish, Deia and Michelle ate a candy, a lollipop and a marshmallow between the three of them. Aish did not eat the candy or the lollipop. Deia did not eat the lollipop. Which girl ate which treat?
2. Mr. Math, a science teacher, says, "I have lived for 24 years, 24 months, 24 weeks, 24 days, and 24 hours." How old is he? (What is his age as a whole number of years?)
3. The numbers 1, 2, 3, ..., 99, 100 are written down on the board. How many 5's are there on the board?
4. The expression  $1\ 2\ 3\ 4\ 5\ 6 = 30$  is written on the board. Insert arithmetic operation signs +, -, x, /, and parenthesis in such a way as to make the equality true. Note that you don't have to use up all the signs; you can reuse the same sign several times if you want to, and it is fine to leave some of the spaces blank.
5. One watermelon weighs 3 kilograms less than 3 watermelons. What is the weight of a watermelon? (All watermelons weigh the same.)
6. Ben's pants have 3 pockets. Ben has 2 identical pennies. In how many different ways can he place these coins into his pockets?
7. Sophie, her mother, her grandmother and her doll are all sitting on a bench. Sophie's grandma is sitting next to Sophie, but not next to the doll. Sophie's mom is not next to the doll, either. Who is sitting next to Sophie's mom?
8. Our soccer team played 31 games this season. Seven of these games ended in a tie. The team scored a total of 64 points: 3 points for each win, 1 point for a tie, and 0 points for a lost game. How many games did the team lose?
9. How many triangles are there in the figure?



10. Valentina, Shagun and Rishika came to visit their friend Alex. Valentina arrived 5 minutes earlier than Shagun, but 3 minutes after Rishika. Rishika was the first to leave. She left 3 minutes earlier than Shagun and 5 minutes before Valentina. By how many minutes did Valentina stay longer at Alex's house than Rishika?
11. Calculate the number of three-digit numbers composed only of non-repeating odd digits. (Examples of such numbers are 135, 351, and 975).
12. Michael has 15 marbles in a box. The marbles are of three different colors: red, white and black. Michael has 7 times more white marbles than red marbles. How many black marbles are there in the box?

13. Kevin is learning how to swim. On Monday, he was able to swim 12 feet. On every consecutive day, he was able to swim twice longer than on the previous day. The day he swam 100 feet, his mom bought him an ice cream. On what day of the week did Kevin get his ice cream?

14. Clarence and Terrence are twin brothers who live on Knights and Knaves Island. One is a knave and the other is a knight. At their birthday party, Clarence told the guests: "I am now more than 11 years old". At the same party, Terrence claimed that he was more than 10 years old. How old are the twins?

15. Decrypt:  $AAA + BB = CKDC$ . (Different letters stand for different digits, and the same letters stand for the same digits.)

16. Four heads of state form a line to shake hands with the winners of the 2021 International Mathematical Olympiad. In how many ways can this line be formed?

17. Which of the fractions  $16/20$ ,  $27/36$ ,  $60/72$  is the closest to 1?

18. Aishwarya's alarm clock is too slow - every hour, it gets behind by three minutes. Currently, the alarm clock shows 11:41 AM. How soon will it show 12:00 PM?