

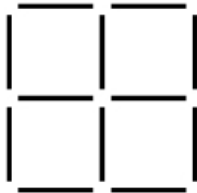




(6) There are 12 people in a room. 6 people are wearing socks and 4 people are wearing shoes, 3 people are wearing both. How many people are bare footed?

(7) A caterpillar is climbing a tree which is 12 m high. Every day, she climbs 4 meters up. Every night she climbs 3m down. Assuming the caterpillar starts early in the morning on Monday at the bottom of the tree, when will it reach the top?

(8) How can you remove two toothpicks from the square shape below and leave two squares of different sizes? Cross out the two that should be removed.



(9) On a 20 question math test, your teacher gives you five points for every correct answer and takes away one point for each incorrect answer. If you score 70 on the test, how many did you get correct?

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- (10) A cereal company puts a 10¢ coupon in every other box of cereal it packages. It puts a pencil in every fifth package and a coupon for a free hamburger in every eighth package. Out of the first 100 boxes, how many will have all three items: a 10¢ coupon, a pencil, and a free hamburger coupon?
- (11) At the end of the soccer tournament, each team captain shakes hands with every other team captain. If there were eight teams in the tournament, how many handshakes were there?
- (12) What number am I thinking of, if it satisfies all of these criterion:
- It is odd.
  - It is between 1 and 100
  - It's bigger than 20
  - It is smaller than the answer to  $6 \times 6$
  - It is a multiple of 5
  - The sum of the digits is 7
- (13) The fifth grade is going on a field trip to the zoo. The zoo requires that for every 10 students, there must be one chaperon. If there are 94 students going on the trip, how many chaperones will be needed?

(14) In basketball, a player can score either a 3–point basket or a 2–point basket. If Walter scored 37 points in a game, how many of each basket did Walter score?

(15) Daisy is 4 years old. Her sister Lily is 10 years older than her. In how many years will Lily be twice as old as Daisy?

(16) There are 12 people who really want to go to Canada. There are 3 cars of sizes 4, 5 and 6 seats respectively. How many different ways are there to let everyone ride? The order of the cars does not matter.

(17) What is the least number of moves in which the numbers below can be put in ascending (increasing) order? Each move is an exchange of neighboring numbers. The numbers are:

3, 7, 6, 8, 9, 2, 5

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- (18) Can you solve the previous problem if you can exchange any two numbers (not necessarily neighbors)? How many moves are needed now?
- (19) Come up with three different math problems for which the answer is 10. Make sure you use different operations (addition, subtraction, multiplication, division) in your problems.
- (a) Problem 1:
- (b) Problem 2:
- (c) Problem 3:
- (20) Three watermelons and two pineapples weigh 32 pounds. Four watermelons and three pineapples weigh 44 pounds. Assume the all watermelons weigh the same and all pineapples weigh the same. How much does two watermelons and one pineapple weigh?
- (21) Alyssa's heart beats at a rate of 80 beats per minute. At this rate, how many days will it take for her heart to beat 1,000,000 times? Explain how you figured it out, step by step.

- (22) Jackie has a rectangular garden, but no plants. She wants to plant her first tree directly in the middle of the garden. She is able to roam around the entire garden with no limitations to where she can go within the garden. How can she find the center of the garden without doing any measurements? (*Helpful Hint:* Jackie is allowed to use any other materials such as markers, string, etc.)
- (23) What is an example of a three digit number which is symmetric horizontally (meaning you can fold it in half along the vertical midline and get the same image on both sides) and symmetric vertically? Can you think of a word that is horizontally symmetric? (*Hint:* There is more than one answer to both of these questions).
- (24) Allen worked in a large building. He always started his day in the basement. He went up 20 floors to give his boss a copy of his paperwork. Then he went down 8 floors to give a presentation. Then he went up 7 floors for a meeting. The floor he is on for his meeting is the mid-floor of the building. How many floors does the building have? (*Helpful Hint:* The basement is below the first floor. Try drawing a picture/diagram)

- (25) Environmentalists figured out that there are 4 oak trees for every 10 pine trees in a forest. How many oak trees are there if they counted 36 more pine trees than oak trees?
- (26) It takes Joey 5 hours to paint a fence, and it takes Jimmy 7 hours. How long will it take them to paint a fence if they work together?
- (27) You need to boil eggs for exactly 9 minutes, or else the visiting Duchess will complain, and you will lose your job as head chef. But you have only 2 hour-glasses, one measures 7-minutes, and the other measures 4-minutes. How can you correctly measure 9 minutes?