

Problems

1. There are 10 sacs that contain coins. Each sac contains 10 coins but we don't know exactly the number. One of them has bronze coins and only bronze coins, however the rest have golden ones and only golden ones. We know that each bronze coin weighs 9 g and each golden 10 g. Can we tell which sac contains the bronze ones by weighting them just once?

2. A cook wants to prepare 3 burgers using a grill that fits only 2. It takes only 5' to grill each side of the burger, so he estimates that it takes 10' to grill the 2 sides of the first 2 burgers and another 10 to grill the third. Is there a faster way to prepare them all?

3. Andrew and Marie live with their 12 children. Some of them are from Peter's previous marriage and some from Marie's previous marriage. Each one is directly related with 9 of these children. How many children did they have together?

4. A census taker came to a house where a man lived with three daughters. "What are your daughters' ages?" he asked. The man replied, "The product of their ages is 36, and the sum of their ages is my house number." "But that's not enough information," the census taker insisted. "All right," answered the farmer, "the oldest plays the piano". What are the daughters' ages?

5. The following series of numbers contains one number that does not fit the pattern set by the others. What number does not fit? 3, 5, 7, 11, 14, 17

6. At one end of a bridge there are four people that have only one torchlight. There is total darkness and they want to cross the bridge. The bridge withstands just two people. If three people try to cross it, the bridge will collapse. A can cross the bridge in 1 minute. B can cross the bridge in two minutes. C can cross the bridge in 4 minutes and D within seven minutes. How can they cross the bridge within 14 minutes?

Fragments:

- On each crossing, at least one person should hold the torch to see.
- When marching two together, the time it takes to cross the bridge is the one that corresponds to slowest person.
- It's not possible that simultaneously 3 people cross, because the bridge will collapse.
- It is forbidden to throw the torch to somebody. Every time they should hand it over.

| | | | |
|----|----|---|---|
| 17 | 8 | 5 | 5 |
| 13 | 7 | 5 | 4 |
| 6 | 12 | 6 | 3 |
| 10 | 6 | 4 | ? |

7. Which number should replace the question mark?

- A. 4
- B. 5

Problems

C. 6

D. 7

8. Which number should come next in this series? 3,5,8,13,21,

A. 4 , B. 21 ,C. 31, D. 34