1. Is it possible to remove 5 matchsticks to create 4 squares?

Note: There should be no 'dangling matchstick'. In other words, both ends of every matchstick must touch another matchstick.

2. There are three people, one of whom is a cop, one a crook, and one a spy. The cop always tells the truth, the crook always lies, and the spy can either lie or tell the truth.

Aroon says: "Coomar is a crook."
Boomi says: "Aroon is a cop."
Coomar says: "I am the spy."

Who is the cop, who is the crook, and who is the spy?
3. Solve this KenKen puzzle keeping in mind the following rules:

- Every row and every column contains every digit 1 through 5 exactly once, and
- Every region completes its stated value.

| $20 \times$ |  | $3-$ |  | $24 \times$ |
| :--- | :--- | :--- | :--- | :--- |
|  | $6+$ |  |  |  |
| $10+$ |  | $1-$ |  |  |
|  | $8+$ |  | $10+$ |  |
|  | $2 \div$ |  | 3 |  |

4. How many three-digit positive integers are divisible by both 12 and 20 , but are not divisible by 16 ?
5. According to the following scales, which of the following will balance three diamonds?

- 1 circle

- 1 square and 1 circle
- 1 square
- 2 squares


