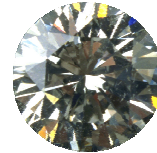




E2K International Riddle

**Written by: Israel Center for Excellence
through Education**

The Smart Diamond Dealer



A smart diamond dealer gave his friend two valuable diamonds and asked him to write a positive whole number on each one without showing him the numbers. His friend did so, and then the dealer gave him a small bag. The dealer asked him to place in the bag either one diamond whose number is an even number or both diamonds for which the sum of the numbers written on them is an even number.

“If you are unable to complete this task, the two diamonds will be yours”, said the dealer.

1. Explain how, without knowing the two numbers, the dealer knew that the task could be completed.

After the task was completed, the dealer took the two diamonds back and gave his friend three new ones. Just like before, he asked his friend to write a positive whole number on each one without letting him see the numbers. Then the dealer said:

“Let’s see if you are luckier this time. In the bag, place diamond/s for which the sum of the numbers written on it/them is divided by 3 with no remainder. If you are unable to complete this task, all three diamonds will be yours.”

2. Explain how, without knowing the three numbers, the dealer knew that this time, too, the task could be completed.