Question 1: If a and b are even numbers and m and n are odd, which are even and which are odd?

1. a+b
2. a+m
3. m+n
4. a-b
5. axb
6. mxn
7. axn
8. axm+b

Question 2: Is it possible to cover a 5x5 square grid with 2x1 dominoes?

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Question 3: At a stand in pike place market, apples cost 49 cents each, oranges 89 cents, and pears 59 cents. Manar buys 9 pieces of fruit and the cashier charges her $5.16. She immediately knows this cannot be right. How?

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Question 4: One day, while The Man in the Yellow Hat is out, Curious George tears 15 pages form a book he finds on the bookshelf. Being curious, George adds up the 30 numbers he found on the pages.(On the front and back) Is it possible that George got 1848 as the sum of these 30 numbers?

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Question 5: (Hard) Filch is standing in a hallway with 100 unlocked doors. He decides to play a trick on the students at Hogwarts. First he turns the lock of every door whose number is divisible by 1. Then he returns to the beginning of the hallway and turns the lock of every door whose number is divisible by 2. Then he does the same for every door whose number is divisible by 3.

He does this once for every number less than or equal to 100.

Once he is done locking and unlocking doors, which doors are locked? Which ones are unlocked?

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