Remainders (*Les restes*)

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1. What is the remainder when you divide 56 by 10?
   When you divide 100 by 10?
   When you divide 9352 by 10?
   Which of the numbers in red is *divisible* by 10?

2. What is the remainder when you divide $56 + 100$ by 10?
   When you divide $56 + 9352$ by 10?
   Did you have to add the numbers in red to answer these questions? Please tell me why.

3. What is the remainder when you divide 10 by 3?
   When you divide 8 by 3?
   When you divide $18 = 10 + 8$ by 3?
   Which of the numbers in red is *divisible* by 3?

4. The numbers in blue and green are remainders upon division by 3. Fill in the table with the division by 3 remainders you would get if you added numbers with a blue and a green remainder.

+	0	1	2
0			
1			
2			

5. An *even* number (*un nombre pair*) has remainder 0 when it is divided by 2. An *odd* number (*un nombre impair*) has remainder 1 when it is divided by 2. Being even or odd is called the *parity* (*la parité*) of a number.
   What is the parity of an even number plus an even number?
   Of an even number plus an odd number?
   Of an odd number plus an odd number?

6. What should we call a number that has remainder 0 when it is divided by 3?
   A number that has remainder 1 when it is divided by 3?
   A number that has remainder 2 when it is divided by 3?

7. What is the remainder when you divide 2 by 9?
   When you divide 10 by 9?
   When you divide 2×10 by 9?
   When you divide 10×10 by 9?
   When you divide 2×100 by 9?
   Did you have to multiply the numbers in red to answer these questions? Please tell me why.

8. What is the parity of an even number times an even number?
   Of an odd number times an even number?
   Of an odd number times an odd number?

9. The numbers in blue and green are remainders upon division by 5. Fill in the table with the division by 5 remainders you would get if you multiplied numbers with a blue and a green remainder.
   Please tell me what you notice about the rows in this table.

×	0	1	2	3	4
0					
1					
2					
3					
4					

10. What is the remainder when you divide 2 by 3?
    When you divide 4 by 3?
    When you divide $6 = 4 + 2$ by 3?
    When you divide 10 by 3?
    When you divide $42 = 4 \times 10 + 2$ by 3?

11. What is the remainder when you divide 31415 by 3?
    When you divide 2718 by 9?
    When you divide 10 by 4?
    When you divide $100 = 10 \times 10$ by 4?
    When you divide 2718 by 4?