Nines and ones

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Jean-Pierre has 9 grandchildren. When he has cookies he tries to share them evenly among the children, with each child getting the same whole number of cookies. Sometimes there are some cookies left over, the *remainder* (*le reste*).

1. He has a box of 10 cookies. What is the remainder after he shares them among the grandchildren? What is the remainder if the box has 30 cookies? If it has 70 cookies?

2. Jean-Pierre has two boxes of cookies. One would have a remainder of 3 if he shared it among the grandchildren. The other would have a reminder of 8. If he shares the cookies from both boxes with the children, what will be the remainder?

3. The remainder of 11 if you divide it by 9 is 2. Suppose Jean-Pierre has 11 boxes of cookies, each of which has a remainder of 3. If he shares all the cookies among the grandchildren, what will be the remainder?

4. What is the remainder of 10 if you divide it by 9?
   What is the remainder of $10 \times 10 = 100$ if you divide it by 9?
   What is the remainder of $10 \times 10 \times 10 = 1000$ if you divide it by 9?

5. What is the remainder of 67 if you divide it by 9?
   What is the remainder of 116 if you divide it by 9?
   What is the remainder of 2034 if you divide it by 9?

6. The number $12,34x$ is evenly divisible by 9. What is the ones digit, x?

7. This year is 2018. Which is the next year that is evenly divisible by 9?

8. The number $3,774,y84$ has remainder 4 when it is divided by 9. What is y?

9. The 2016 Summer Olympics were held in Brazil. The Olympics happen every 4 years (in years divisible by 4). When will the next Summer Olympics happen in a year divisible by 9?

10. How do you know if a number is evenly divisible by 9? Evenly divisible by 4?