
Finding digits using divisibility tests

1. The last digit of a square of a natural number is odd. What can the next-to-last digit be equal to?
2. The next-to-last digit of a perfect square is odd. What can be the last digit?
3. Write single digits in the blanks to make a four-digit number that's a multiple of 15:
— 1 5 —
4. How many four-digit numbers with 97 in the middle are multiples of 45?

Answers

1. Next-to-last digit can be any even digit: 0, 2, 4, 6, or 8.
2. Only 6.
3. If the last digit is 0, the first one can be 3, 6, or 9.
If the last digit is 5, the first digit can be 1, 4, or 7.
4. Only two: 2970 and 6975.