

Odds and ends

Think like a Roman

What's this integer sequence? What's the pattern?

I II III IV V VI VII VIII IX X
I II III III II III IV V III II

The Collatz conjecture

Pick a number n .

If n is even, divide it by 2.

If n is odd, multiply it by 3 and add 1.

Repeat until you get to 1.

The number of steps taken is n 's Collatz number.

What are the Collatz numbers of the numbers 1 to 10?

Can you find a three-digit number which takes 7 steps?

Partitions

How many ways can you write n as the sum of smaller numbers?

