Some sample problems, that use a divide-and-conquer approach for solutions.

1. Given an integer n, compute the nth Fibonacci number using the divide and conquer approach.

2. Given an integer n, compute the factorial of that number using the divide and conquer approach.

3. Given a positive real number x, compute the square root of x using the divide and conquer approach.

4. Given a positive integer n, compute the prime factorization of n using the divide and conquer approach.

5. Given two positive integers a and b, compute their greatest common divisor using the divide and conquer approach.

6. Given two positive integers a and b, compute their least common multiple using the divide and conquer approach.