Given a pile of \( n \) rocks (where \( n > 1 \)),
compute a number called \( \text{SPLIT}(n) \) in the following way:

The base case is when the pile has 1 rock; \( \text{SPLIT}(1) = 0 \)

In general,
given \( n \) rocks,
split the pile into 2 non-empty piles of \( k \) and \( n-k \) rocks.

Then, \( \text{SPLIT}(n) = (k) \cdot (n-k) + \text{SPLIT}(k) + \text{SPLIT}(n-k) \)

**THEOREM:**

\[
\forall \ n > 0 \quad \text{SPLIT}(n) = \frac{(n)(n - 1)}{2}
\]

**PROOF:** By induction on \( n \).

Base case: \( n = 1 \). \( \text{SPLIT}(1) = 0 = \frac{(1)(1 - 1)}{2} \)