Given a number n, we must break the integer down into parts that when multiplied together, will give the maximum product.

Our goal right now is to split a digit into smaller positive numbers, at least 2, that add up to it. We must multiply those numbers to obtain the maximum product possible.

I would need a method that will take in the number, a positive integer, and split it into parts

Pass in a variable 2 from the main to the method that will break up the number. Once the number is broken up. We only need to break into multiples of 2 or 3 to get the maximum product, but because this number is less than 3, we can break it up in terms of the base case being 2. 3 would be broken up into 2+1, 2 would be broken down into 1+1

We can use an if statement to check the base case.

public int integerBreak(int n) {

if (n == 2 || n == 3){

return (n-1);

}

int maxProduct = 1;

while (n > 4){

n -= 3;

maxProduct \*= 3; // Keep multiplying 3.

}

return (n \* maxProduct); // multiply with left over n.

}