ONE PILE LEFT

If A&B or B&C or A&C are empty (ie, one pile left)

Take total remaining pile -1

TWO PILES LEFT

If A is empty or B is empty or C is empty (ie, two piles left)

If one pile is even & greater than or equal 3

util.a % 2 == 0 && util.a >= 3

Take 2 from the big pile

If both piles are odd and are <= 3

Take 1 from either

If one pile is even & less than or equal to 3 (ie, 2)

Take 1 from other pile (whichever has more)

If both piles are even & less than or equal to 3 (ie, 2)

Take 1 from either

If both piles have an odd number less than 3 (ie, 1 and 1)

Take 1 from whichever

If one pile has has an odd number less than 3 and the other pile has an even number less than 3 (ie, 1 and 2)

Take 2 from the bigger pile

THREE PILES LEFT

If any pile has an odd number

Take 1

If a pile has an even number

Take all