

General information: The digits should normally be in descending order.

Multiples of 2: Let's say I get 9, 5 and 8. Here I would put 9 as the thousands digit so it will be a big number and again we can put 9 as our hundreds digit to make it even bigger. 5 for our tens digit because 5 can't be the last digit and 8 for the units or ones digit because it's an even number which we need to be divisible by 2.

Multiples of 3: Let's say the numbers are 7, 6 and 5. I would first add up the numbers which would be 18 which is divisible by 3 so I look at the biggest one digit that is divisible by 3 which is 9 and I put the digits 9, 7, 6 and 5 in descending order so the biggest number would be 9765.

Multiples of 4: Let's say the numbers are 9, 8 and 3. Since all these numbers are odd I would put these in descending order like 983. The divisibility rule for 4 is that the last 2 digits are divisible by 4. So the only numbers divisible are 32 and 36. 36 is greater so we will take 6 and the number would be 9836. Special situations: When there is a small even number let's say 9, 8 and 2. I would put 9 like the way it was. But instead of putting 8 as the hundreds digit I would put it at the back and see what the biggest could be that would have 8 at the end. So 28 is divisible by 4. I would put another 9 at the hundreds digit and then the biggest number would be 9928 because 28 would work better.

Multiples of 6: Let's say the numbers are 7, 2 and 9. I would add them up and I would get 18. So I would add another 9 at the thousands place and make it go in a descending order. So that would be 9972. Special Situations: Let's say I have 9, 7 and 6. They add up to 22 I would put them in descending order but I would look for the largest number that adds to the nearest multiple of 3 but it's even. Here that number would be 8. So the digits would be 9, 7, 6 and 8. So since 6 is the lowest and a number that is even the largest number would be 9876 .