Wipeout

Take the numbers 1, 2, 3, 4, 5, 6, and choose one to wipe out.

For example, you might wipe out 5, leaving you with 1, 2, 3, 4, 6.

The mean of what is left is 3.2

I wonder whether I can wipe out one number from 1 to 6, and leave behind an average which is a whole number...

What about starting with other sets of numbers from 1 to N, where N is even, **wiping out just one number**, and finding the mean?

Which numbers can be wiped out, so that the mean of what is left is a whole number? Can you explain why?

What happens when N is odd?

Here are some puzzling wipeouts you might like to try:

One of the numbers from 1, 2, 3, 4, 5, 6 is wiped out.
The mean of what is left is 3.6
Which number was crossed out?

One of the numbers from 1 to 15 is wiped out.
The mean of what is left is $7.\dot{7}14285\dot{7}$
Which number was crossed out?

One of the numbers from 1 to N, where N is unknown, is wiped out.
The mean of what is left is $6.8\dot{3}$
What is N, and which number was crossed out?

One of the numbers from 1 to N is wiped out.
The mean of what is left is 25.76
What is N, and which number was crossed out?