

January 3<sup>rd</sup>

Consecutive numbers can be written as...

...n-3, n-2, n-1, n, n+1, n+2, ....

So the sum of three consecutive numbers is

$$(n-1) + n + (n+1) = 3n \quad \text{which is clearly a multiple of 3}$$

The sum of five consecutive numbers is

$$(n-2) + (n-1) + n + (n+1) + (n+2) = 5n \quad \text{which is clearly a multiple of 5}$$

The sum of four consecutive numbers is

$$(n-2) + (n-1) + n + (n+1) = 4n - 2$$

which is NOT divisible by 4 for all values of n