5.

Proof: any integer is one of the forms $3x, 3x+1, 3x+2$ for an integer x

We will show that the statement holds when integer n is any of above forms.

If $n=3x$ for an integer x, since x is an integer, n is divisible by 3

If $n=3x+1$, $n+2=3x+3=3(x+1)$, so $n+2$ is divisible by 3

If $n=3x+2$, $n+4=3x+6=3(x+2)$, so $n+4$ is divisible by 3

So, look at all the forms of n, at least one of the integers n, n + 2, n + 4 is divisible by 3. The statement has been proved.