* *اذا كانت $f(x)=-f(x)$ دوال فردية ***Odd Function*** :

$$a_m=0\,,b_m=\frac{2}{\pi}\int_0^{\pi} f(x)\sin(mx)\,dx$$

Even – Harmonic Function	***Odd – Harmonic Function***
$f(x)=f(-x),\ f(x+\frac{\pi}{2})=-f(\frac{\pi}{2}-x)$	$f(x)=-f(-x),\ f(x+\frac{\pi}{2})=-f(\frac{\pi}{2}-x)$
$a_m=\frac{4}{\pi}\int_0^{\frac{\pi}{2}} f(x)\cos(mx)\,dx$	$b_m=\frac{4}{\pi}\int_0^{\frac{\pi}{2}} f(x)\sin(mx)\,dx$
$for\ m=1\,,2\,,3\,,5\,,7.....$ $a_m=0\ for\ m=0\,,2\,,4\,,6\,,...$ $b_m=0\ for\ m=1\,,2\,,3\,,4\,,....$	$for\ m=1\,,3\,,5\,,7$ $a_m=0\ for\ m=0\,,1\,,2\,,3\,,....$ $b_m=0\ for\ m=2\,,4\,,6\,,....$

Integrals Containing Sin Function
