ECE 202 - Project 1 - Phase 1

n	$f^n(t)$	$f^n(0)$
0	$2\cos(40t)$	12
1	$-12(40)\sin(40t)$	0
2	$-12(40^2)\cos(40t)$	$-12(40)^2$
3	$12(40^3)\sin(40t)$	0
4	$+12(40^4)\cos(40t)$	$12\cdot(40^4)$
5	$-12(40^5)\sin(40t)$	0
6	$-12(40^6)\cos(40t)$	$-12\cdot(40^6)$

$$a_n = \begin{cases} \dfrac{12(-1)^{n/2}\cdot 40^n}{n!}, & \because a_n = \dfrac{f^n(0)}{n!},\ n \text{ is even} \\ \dfrac{0}{n!} = 0, & n \text{ is odd} \end{cases}$$

So, first 6 non-zero terms will be

$n = 0, 2, 4, 6, 8, 10$