4. *Cosine series*: $a_0 = 1$; the coefficient of $\cos(n\pi/2)$ is $a_n = 0$ for $n$ odd, $a_n = 0$ if $n = 4k$, $a_n = -16/n^2\pi^2$ if $n = 4k + 2$.

*Sine series*: The coefficient of $\sin(n\pi/2)$ is given by $b_n = 0$ for $n$ even, $b_n = 8/n^2\pi^2$ if $n = 4k + 1$, and $b_n = -8/n^2\pi^2$ if $n = 4k + 3$.

10. *Cosine series*: $a_0 = 2/\pi$; the coefficient of $\cos(nt/2)$ is $a_n = -4/\pi(n^2 - 4)$ if $n$ is odd, $a_n = -8/\pi(n^2 - 4)$ if $n = 4k$, and $a_n = 0$ if $n = 4k + 2$. 