

A simple solution is to apply Simpson's (standard) rule to the first $n - 3$ grid points, where $n - 3$ is even for n odd, and cover the remaining three gridpoints via the [Simpson 3/8 formula](#):

$$I_{3/8} = \frac{3h}{8} [f(x_{n-3}) + 3f(x_{n-2}) + 3f(x_{n-1}) + f(x_n)].$$

Both have remainder terms of order $\mathcal{O}(h^5)$, so it keeps the order of the Simpson integration.