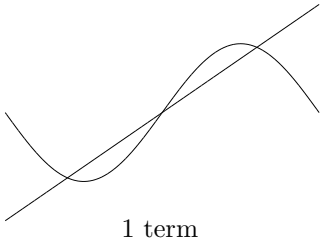
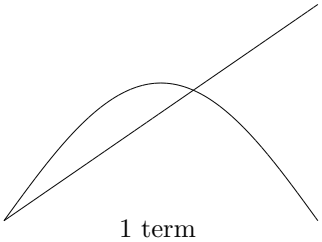
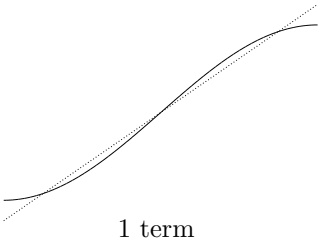
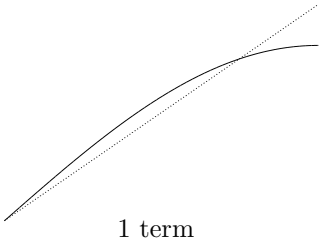
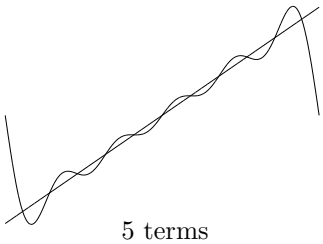
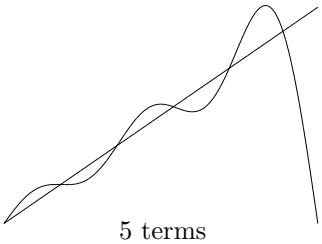
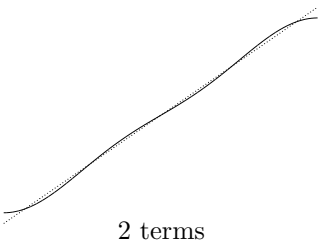
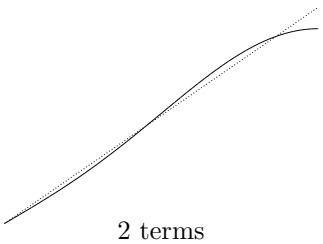
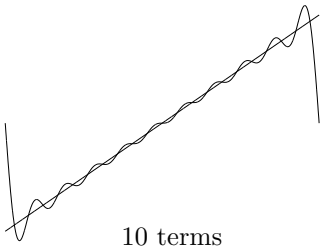
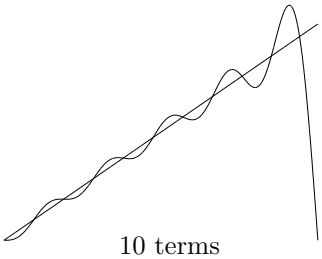
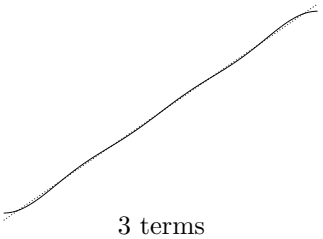
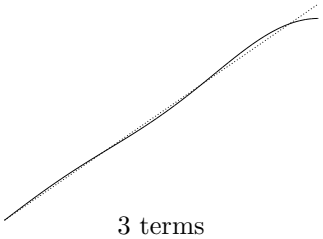
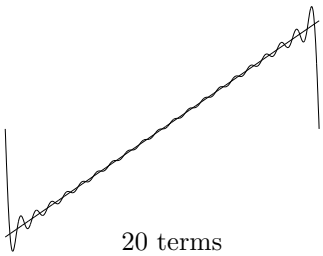
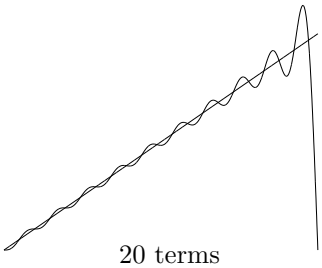
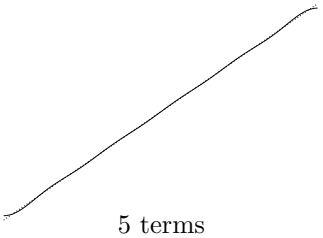
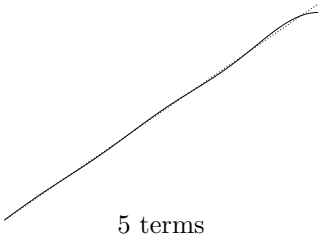
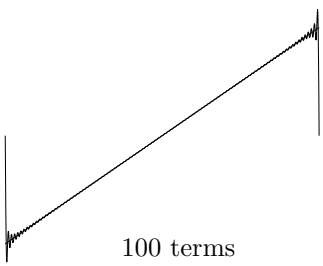
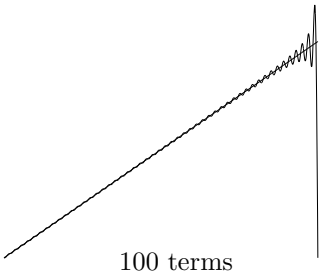
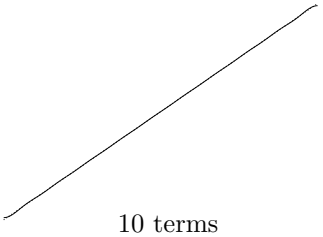
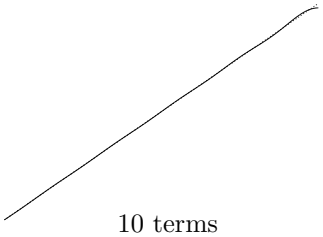
An illustration of the four different types of Fourier Series used in ME20021

$\boxed{f(x) = x \text{ in the range, } 0 \leq x \leq 1.}$

Fourier Series	**Fourier Sine Series**	**Fourier Cosine Series**	**Quarter range Series**
 1 term	 1 term	 1 term	 1 term
 5 terms	 5 terms	 2 terms	 2 terms
 10 terms	 10 terms	 3 terms	 3 terms
 20 terms	 20 terms	 5 terms	 5 terms
 100 terms	 100 terms	 10 terms	 10 terms
$\frac{1}{2} - \sum_{n=1}^{\infty} \frac{\sin 2n\pi x}{n\pi}$	$\sum_{n=1}^{\infty} \frac{2(-1)^{n+1}}{n\pi} \sin n\pi x$	$\frac{1}{2} - \sum_{\substack{n=1 \\ n \text{ odd}}}^{\infty} \frac{4}{n^2\pi^2} \cos n\pi x$	$\sum_{\substack{n=1 \\ n \text{ odd}}}^{\infty} \frac{8 \sin(\frac{1}{2}n\pi)}{n^2\pi^2} \sin\left(\frac{n\pi x}{2}\right)$