

1. Let  $f(t) = t$  on  $[0, \pi]$ .
  - (a) Compute the sine series of  $f$ .
  - (b) Compute the cosine series of  $f$ .
2. Let  $f(t) = \sin(3t)$  on  $[0, \pi]$ .
  - (a) Compute the sine series of  $f$ .
  - (b) Compute the cosine series of  $f$ .