Math 3 – Autumn2018　　　　　　　　Mid-Term Exam 2　　　　　　　　　　20 Marks

[1]Write the Fourier series of the function $f(x) = x$, x in $[-\pi, \pi]$, $f(x + 2\pi) = f(x)$.

Also, Find the sum of the series : $\sum_{n=1}^{\infty} \frac{1}{2n-1}$ and apply the Parseval's identity.

[2]Write the Fourier cosine of the function $f(x) = x + 1$, x in $[0,1]$, $f(x + 2) = f(x)$.

Good Luck　　　　　　　　　　　　　　*Dr. Mohamed Eid*

Math 3-K – Autumn2018　　　　　Mid-Term Exam 2　　　Model A　　　20 Marks

[1]Write the Fourier series of the function $f(x) = |x|$, x in $[-1,1]$, $f(x + 2) = f(x)$

Also, Find the sum of the series: $\sum_{n=1}^{\infty} \frac{1}{(2n-1)^2}$ and apply the Parseval's identity.

[2]Write the Fourier sine of the function $f(x) = x - 2$, x in $[0,2]$, $f(x + 4) = f(x)$.

Good Luck　　　　　　　　　　　　　　*Dr. Mohamed Eid*

Math 3-K – Autumn2018　　　　　Mid-Term Exam 2　　　Model B　　　20 Marks

[1]Write the Fourier series of the function $f(x) = |\sin x|$, x in $[-\pi, \pi]$, $f(x + 2\pi) = f(x)$

Also, Find the sum of the series: $\sum_{n=1}^{\infty} \frac{1}{(2n-1)(2n+1)}$ and apply the Parseval's identity.

[2]Write the Fourier cosine of the function $f(x) = x$, x in $[0, \pi]$, $f(x + 2\pi) = f(x)$.

Good Luck　　　　　　　　　　　　　　*Dr. Mohamed Eid*

Math 3-K – Autumn2018　　　　　Mid-Term Exam 2　　　Model C　　　20 Marks

[1]Write the Fourier series of the function $f(x) = \begin{cases} 0, & -2 \leq x \leq 0 \\ x, & 0 \leq x \leq 2 \end{cases}$ and $f(x + 4) = f(x)$

Also, Find the sum of the series: $\sum_{n=1}^{\infty} \frac{1}{(2n-1)^2}$ and apply the Parseval's identity.

[2]Write the Fourier sine of the function $f(x) = 1 - x$, x in $[0,1]$, $f(x + 2) = f(x)$.

Good Luck　　　　　　　　　　　　　　*Dr. Mohamed Eid*

[1]Write the Fourier series of the function $f(x) = 1 - |x|$, x in $[-1,1]$, $f(x + 2) = f(x)$

Also, Find the sum of the series : $\sum_{n=1}^{\infty} \frac{1}{(2n-1)^2}$ and apply the Parseval's identity.

[2]Write the Fourier cosine of the function $f(x) = 1 + x$, x in $[0,2]$, $f(x + 4) = f(x)$.

Good Luck   *Dr. Mohamed Eid*