EM Theory Lab

Part 1

Q1:

Showing process on Good Notes.

Interval =

Q2:



Comment and compare and explain the difference:

* Comment: generally, it is a good approximation from -50 to 50 cm, with similar value and shape to the accurate one.
* Compare: the difference (error) between the accurate one and the approximated one is the smallest when x approaching 0, with they meet at point (0, 1).
* However, as it goes further away from x = 0, the error becomes larger. It can be observed that the approximated one is always having constant maximum intensity, while the actual one starting to be attenuated as it goes away from x=0; Also, while the period of the approximated equation is always fixed, as it goes along from x = 0, the actual period becomes larger.

1. Explain: To explain this,
   1. approximation of 'd is much larger than D', where we got 'l1 =l2 = D'. In this way, we underestimated the value of l1 and l2 to be D all the time, while D is their minimum value.
   2. approximation of ‘ approximately = 0’, where we got and the Taylor expansion of centred at .