LAST !   FIRST !

$\boxed{10}$

Show all work, including mental steps, in a clearly organized way that speaks for itself. User proper mathematical notation, identifying expressions by their proper symbols (introducing them if necessary), and use arrows and equal signs when appropriate. BOX final short answers. Always simplify expressions.

① $f(t) = t e^t$ a) Calculate $f'(t)$ and factor your result.

b) Find the values of t for which $f'(t) = 0$.

② $y = \dfrac{\sin x}{x}$
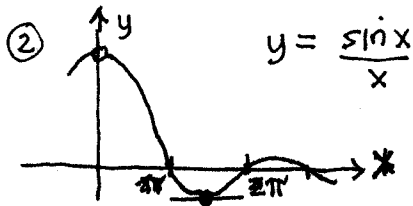
a) Calculate dy/dx using the quotient rule.

b) Use your graphing calculator or Maple or Mathcad to numerically find the value of x where $dy/dx = 0$ for $0 < x < 2\pi$.

c) What value does y have there?