Homework #4

Problem 1 - 1.11.4:

In class we saw that

\[ \delta(g(x)) = \sum_i \frac{\delta(x - x_i)}{|g'(x_i)|}, \]  

(1)

where \( x_i \) are the zeroes of \( g(x) \). Then, in this case \( g(x) = a(x - x_1) \) which has a zero at \( x = x_1 \) and \( g'(x = x_1) = a \); then, replacing in Eq.(1) we obtain:

\[ \delta(a(x - x_1)) = \frac{\delta(x - x_1)}{|a|}. \]  

(2)