## Worksheet \#9: WKB approximation

Consider $\epsilon^{2} y^{\prime \prime}-x y=0$, where $\epsilon \ll 1$.
(1) For what domains is it oscillatory? Evanescent (growing/decaying)?
(2) Lets take $x>1$. Write down $k(x)$.
(3) Write down the general WKB solution.
(4) Find the coefficients with the boundary conditions: $y(1)=1, \lim _{x \rightarrow \infty} y(x)=0$.
(5) Rewrite the WKB solution so $x=1$ is lower limit of action integral.

