

# Problems to 1<sup>st</sup> seminar

1. Calculate  $\sqrt{\partial_x} x^n = ?$
2. Find asymptotic at  $\alpha \rightarrow 0$   
of  $\sum_{n=0}^{\infty} n e^{-\alpha n^2}$
3. Show that  $f(x-ct)$  and  $g(x+ct)$  are solutions of  
the wave equation  
$$\partial_t^2 q(x,t) = c^2 \partial_x^2 q(x,t)$$