

1 Consider the scalar theory with interaction term:

(Nastase 18.1)

$$\mathcal{S}_I(\phi) = \frac{\lambda_S}{5!} \phi^5$$

a Write down the Dyson-Schwinger equation for  $\mathcal{G}^{(n)}$  in this model (in the form of equations AND diagrams)

b Specialize it for  $\mathcal{G}^{(4)}$  and then iterate it once (again, equation and diagrams)

(you will obtain the analogous of the big expression in the middle of pag 186 of the lecture notes)