

## • Exercise 6.

In the theory of one light and one heavy scalar, discussed in class, compute:

a) The expression of  $C_1^{(2,0)}$  given during the lecture

b) The tree-level coefficient  $C_0^{(4,2)}$ , this comes from matching the  $2 \rightarrow 2$  amplitude:

$$\text{diagram} + \dots = X + X C_0^{(4,2)}$$


at an higher order in  $E/M$ , e.e. at an higher order in the expansion of the heavy field propagator.