

Homework 5

Xie Zejian

11810105@mail.sustech.edu.cn

Department of Finance, SUSTech

Last compiled on 18:46, 21 November, 2021

Exercise 0.1.

Solution. a.

$$\begin{aligned} v_n(s, y) &= \frac{1}{1+r} [\hat{p}v_{n+1}(us, y + us) + \hat{q}v_{n+1}(ds, y + ds)] \\ &= \frac{2}{5} \left[v_{n+1}(2s, y + 2s) + v_{n+1}\left(\frac{s}{2}, y + \frac{s}{2}\right) \right] \end{aligned}$$

b. See figure 1

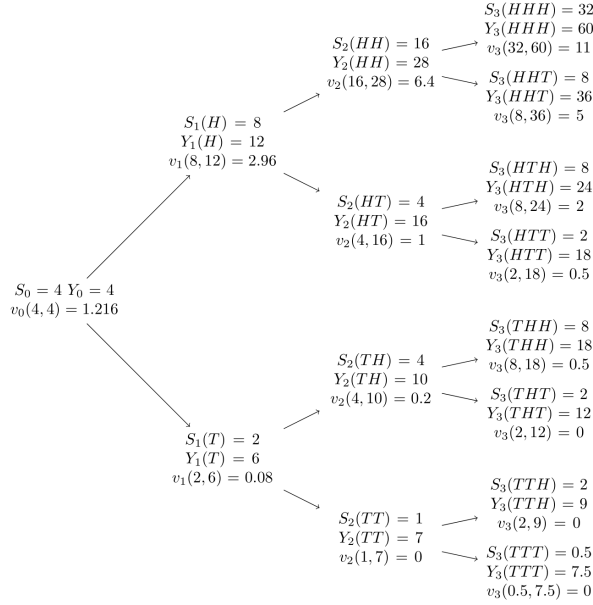


Figure 1: Asian option

c.

$$\delta_n(s, y) = \frac{v_{n+1}(us, y + us) - v_{n+1}(ds, y + ds)}{(u - d)s}$$