

Financial Mathematics 2 - Fall term 2015

Exercise sheet no.3 (24.9.2015)

Exercise 1: Consider

$$(S) = \begin{cases} \partial_t u + \frac{\sigma^2}{2} \partial_{xx} u = 0 & \text{in } [0, T) \times \mathbb{R} \\ u(T, x) = x^2 & \text{for } x \in \mathbb{R}, \end{cases}$$

where $\partial_t := \frac{\partial}{\partial t}$, and $\partial_{xx} := \frac{\partial^2}{\partial x^2}$.

- (i) How does the stochastic representation of the solution to (S) look like ?
- (ii) From the stochastic representation explicitly calculate the solution to (S).

Please drop the solutions into the homework box of the lecture until 1.10.2015, 6 pm