

## Exercise 4

Suppose that some particles which are suspended in a liquid medium would be pulled down at the constant speed  $V > 0$  by gravity in the absence of diffusion. Taking account of the diffusion, find the equation for the concentration of particles. Assume homogeneity in the horizontal directions  $x$  and  $y$ . Let the  $z$  axis point upwards. [TYPO: If particles have positive velocity going down, that implies the  $z$  axis points downward.]