

PROBLEM 1.7

A WELL-STIRRED TANK IS
FED BY AN INLET PIPE WITH
CROSS-SECTION, $A_1 = 10 \text{ cm}^2$.
THE INLET VELOCITY IS $U_1 = 10 \frac{\text{cm}}{\text{s}}$.
INSIDE THE TANK A PLASTER BALL

SLOWLY DISSOLVES SUPPLYING A STEADY
SOURCE OF CALCIUM CARBONATE TO THE WATER, $S = +5 \text{ g/s}$.
THE OUTLET PIPE AREA IS THE SAME AS THE INLET.
THERE IS NO CALCIUM CARBONATE IN THE INFLOW.
AT STEADY STATE, WHAT IS THE OUTLET CONCENTRATION?

