

## PROBLEM:

Determine the  $z$ -transforms of the following. *Express your answer as the ratio of polynomials in  $z^{-1}$  by placing all terms over a common denominator.*

(a)  $x_a[n] = \delta[n] - (-0.8)^n u[n].$

(b)  $x_b[n] = 2\left(\frac{1}{2}\right)^n u[n] + 2\left(-\frac{1}{2}\right)^n u[n].$

(c)  $x_b[n] = \delta[n - 1] + u[n].$