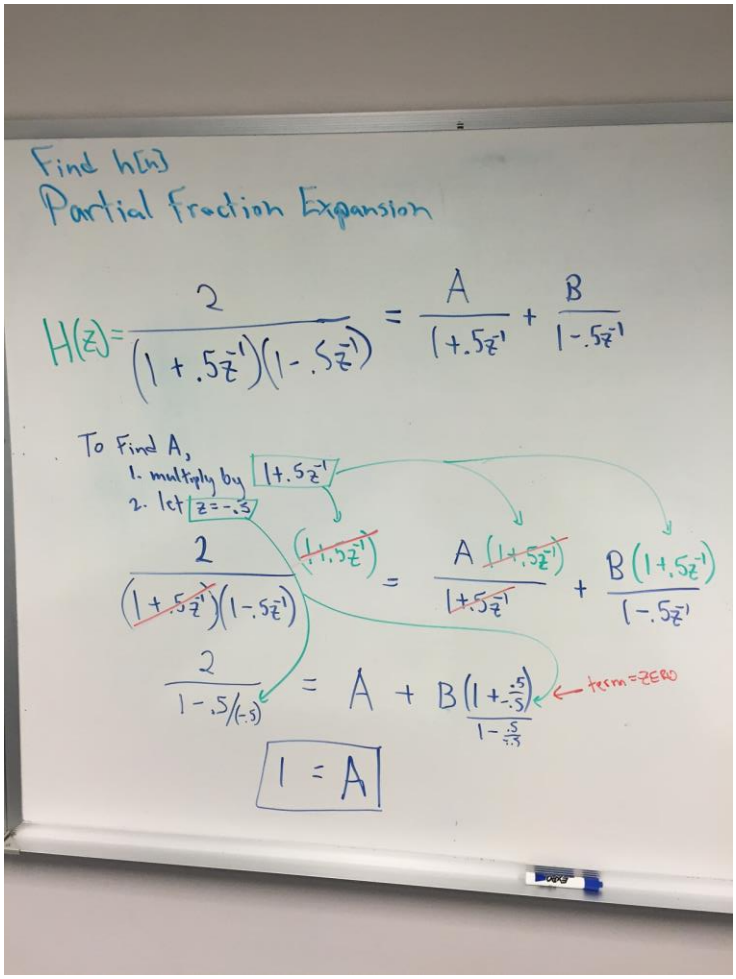
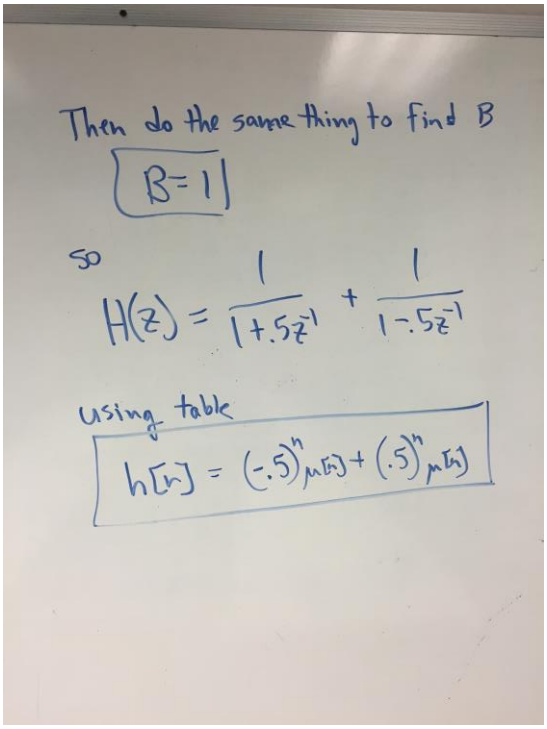

Find h[n]
Partial Fraction Expansion
$H(z) = \frac{2}{(1+.5z^{-1})(1-.5z^{-1})} = \frac{A}{1+.5z^{-1}} + \frac{B}{1-.5z^{-1}}$
To Find A,
1. multiply by $1+.5z^{-1}$
2. let $z=-.5$
$\frac{2}{(1+.5z^{-1})(1-.5z^{-1})}(1+.5z^{-1}) = \frac{A(1+.5z^{-1})}{1+.5z^{-1}} + \frac{B(1+.5z^{-1})}{1-.5z^{-1}}$
$\frac{2}{1-.5/(-.5)} = A + B\frac{(1+\frac{.5}{-.5})}{1-\frac{.5}{-.5}}$ ← term=ZERO
$1 = A$


Then do the same thing to find B
$B = 1$
so
$H(z) = \frac{1}{1+.5z^{-1}} + \frac{1}{1-.5z^{-1}}$
using table
$h[n] = (-.5)^n \mu[n] + (.5)^n \mu[n]$