PROBLEM:

For each $H(z)$, determine all of the poles and zeros, including those at $z = 0$ and $z = \infty$.

System Function, $H(z)$ **Poles and Zeros**

(a) $H(z) = (1 - jz^{-1})(1 + jz^{-1})$

ANS = ☐

(b) $H(z) = \dfrac{1}{1 - \frac{1}{2}z^{-1}}$

ANS = ☐

(c) $H(z) = \dfrac{1}{1 - 0.81z^{-2}}$

ANS = ☐

(d) $H(z) = \dfrac{1}{1 + 0.81z^{-2}}$

ANS = ☐

(e) $H(z) = \dfrac{z^{-1}}{1 + \frac{1}{2}z^{-1}}$

ANS = ☐

1. pole at $z = 2$, zero at $z = 0$

2. poles at $z = 0$, zeros at $z = \pm j$

3. pole at $z = -\frac{1}{2}$, zero at $z = \infty$

4. pole at $z = -2$, zero at $z = \infty$

5. poles at $z = \pm 0.9$, zeros at $z = 0$

6. poles at $z = \pm j0.9$, zeros at $z = 0$

7. pole at $z = \frac{1}{2}$, zero at $z = 0$

8. pole at $z = \frac{1}{2}$, no zeros