PROBLEM:

For each of the following frequency responses on the left, pick one of the representations, S_1 through S_8 on the right, that defines *exactly* the same LTI system. Write your answer S_1, S_2, S_3, S_4, S_5, S_6, S_7, or S_8, in the box next to each frequency response.

$\boxed{\text{Ans} = }$	(a)	$1 + e^{j\hat\omega}$		S_1	$b_k = \{1, 0, 1\}$

$\boxed{\text{Ans} = }$	(b)	$2e^{-3j\hat\omega}$		S_2	$y[n] = x[n] + 2x[n-3]$

$\boxed{\text{Ans} = }$	(c)	$\dfrac{\sin(2\hat\omega)}{\sin(\hat\omega/2)}e^{-3j\hat\omega/2}$		S_3	$b_k = \{1, 1, 1, 1\}$

$\boxed{\text{Ans} = }$	(d)	$e^{-j\hat\omega}\cos(\hat\omega)$		S_4	$h[n] = 0.5\delta[n] + 0.5\delta[n-2]$

$S_5 \qquad h[n] = 2\delta[n-3]$

$S_6 \qquad h[n] = \delta[n] - \delta[n-1]$

$S_7 \qquad y[n] = \frac{1}{3}\{x[n] + x[n-1] + x[n-2]\}$

$S_8 \qquad y[n] = x[n] + x[n-1]$