

**PROBLEM:**

Pick the correct output signal and enter the number in the answer box:

**Difference Equation, or  $h[n]$ , and input**

**Output Signal**

(a)  $y[n] = x[n - 1] - x[n - 3]$  and

$$x[n] = \delta[n - 2]$$

**ANS =**

(b)  $y[n] = \delta[n - 1] * (\delta[n] - \delta[n - 2])$

**ANS =**

(c)  $y[n] = \sum_{n=0}^2 x[n - k]$  and

$$x[n] = 1 + \cos(2\pi n/3) \quad \text{for all } n$$

**ANS =**

(d)  $y = \text{conv}([1, -1, 1, -1], [1, 1, 0, 0, 0])$

**ANS =**

1.  $y[n] = \delta[n - 1] - \delta[n - 3]$

2.  $y[n] = \delta[n - 3] - \delta[n - 5]$

3.  $y[n] = \delta[n] - \delta[n - 4]$

4.  $y[n] = 0$  for all  $n$

5.  $y[n] = 3$  for all  $n$

6.  $y[n] = \cos(2\pi n/3)$  for all  $n$