ECE 113 HW 2

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Problem 1

We have that
$$h[-n] = \{4, -6, 5 - 3\}, -1 \le n \le 2$$
Thus
$$h[-n-1] = \{4, -6, 5 - 3\}, -2 \le n \le 1$$
So $y[-1] = -12 - 15 - 12 = \boxed{-39}$

Problem 2

(a)

$$x_1[n] * x_1[n] = \boxed{\{1, -2, 3, -2, 1\}, -2 \le n \le 2}$$

(b)

$$x_2[n] * x_2[n] = \boxed{\{1, -2, 1, 2, -4, 2, 1, -2, 1\}, 0 \le n \le 8}$$

(c)

$$x_3[n] * x_3[n] = \boxed{\{1, -4, 4, 4, -10, 4, 4, -4, 1\}, -6 \leq n \leq 2}$$

Problem 3