C.1.

$$Na \qquad a = 3c$$

$$H \qquad a + 8b = 5c + 2d$$

$$C \qquad a + 6b = 6c + e$$

$$O \qquad 3a + 7b = 7c + d + 2e$$

$$H \qquad 3c + 8b = 5c + 2d$$

$$d = 4b - c$$

$$O \qquad 9c + 7b = 7c + 4b - c + 2e$$

$$3c + 3b = \cancel{7c} + 2e$$

$$e = \frac{3b + 3c}{2}$$

$$C \qquad 3c + 6b = 6c + \frac{3b + 3c}{2}$$

$$-\frac{3b}{2} + 6b = \frac{9c}{2}$$

$$\frac{9b}{2} = \frac{9c}{2}$$

$$b = c$$

If we set $b = c = 1$

$$\Downarrow$$

$$\underline{b = c = 1, \ e = 3, \ d = 3, \ a = 3}$$

C.2

$$x_1 + x_2 = 80 \qquad x_2 = 80 - x_1$$

$$x_1 + x_3 = 20 \qquad x_3 = 20 - x_1$$

$$x_4 = x_2 - x_3 \qquad x_4 = 80 - x_1 - (20 - x_1)$$

$$60 = x_2 - x_3 \qquad = 80 - 20 = \underline{60}$$

$$x_1 = 20 - x_3 \quad \Rightarrow \quad x_1 \in [0, 20], \ x_3 \in [0, 20]$$

$$x_2 = 80 - x_1 \quad \Rightarrow \quad x_2 \in [0, 80], \ x_1 \in [0, 80]$$

$$\cancel{x_3 = 60}$$

$$x_3 = x_2 - 60 \quad \Rightarrow \quad x_3 \in [60, \rightarrow\rangle, \ x_2 \in [60, \rightarrow\rangle$$

$$x_1 \in [0, 20], \ x_2 \in [60, 80], \ x_3 \in [0, 20]$$

The largest possible value for x_3 is $\underline{20.}$