Alma Alverado
5/4/22

1.

(a) compute Gain (A_1) = $\boxed{0.1709}$

$.9709 - \frac{4}{5} \times B\left(\frac{1}{3}\right) - \frac{1}{5} \cdot B(0) = 0.1709$

(b) compute Gain (A_2) = $\boxed{0.420}$

$B\left(\frac{2}{5}\right) - \frac{3}{5} \cdot B\left(\frac{2}{3}\right) = 0.420$

(c) compute Gain (A_3) = $\boxed{0.020}$

$B\left(\frac{2}{5}\right) - \frac{2}{5} \cdot B\left(\frac{1}{2}\right) - \frac{3}{5} \cdot B\left(\frac{1}{3}\right) = 0.020$

2. Consider the XOR Function. Draw a minimal-sized decision tree for the three-input XOR function.