TH3, Ex. 3.b solution

Solution: Consider the separating PBE where sellers of bad cars don't give warranty, but sellers of good cars do. Go through the signaling requirements:

SR3: The beliefs of the consumer C that are consistent with this separating strategy are that it's a good car if the sellers gives warranty and a bad car if not, i.e. $\mu(Bad|W) = p = 0$ and $\mu(Bad|NW) = q = 1$. (1 point)

SR2R: Given these beliefs, the consumer buys a car with a warranty but does not buy a car without a warranty as:

$$\mathbb{E}[u_C(W, B)|p = 0] = 2 > 0 = \mathbb{E}[u_C(W, N)|p = 0]$$
$$\mathbb{E}[u_C(NW, N)|q = 1] = 0 > -1 = \mathbb{E}[u_C(NW, B)|q = 1] \qquad \text{(1 point)}$$

SR2S: Sellers of good cars nor sellers of bad cars wants to deviate as: