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**1. Welcome to CSE 311!**

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(a) Consider the term  $NP$ . Let  $N = 2$ . Then, conveniently notice that:

$$NP = 2 \cdot P \tag{1}$$

$$\neq P \tag{2}$$

We can see that there exists at least some case where  $P \neq NP$ . □

(b) This is another part.