MATH 2100 / 2105 / 2350 – QUIZ 0 (GRADE DOESN'T COUNT)

Optional – Turn in on Wednesday, February 6 if you want me to score it

Instructions: Please write your work neatly and clearly. **You must explain all reasoning. It is not sufficient to just write the correct answer.**

1. Use a truth table to check if the two statements below are logically equivalent.

$$(\neg q \wedge p) \vee (\neg p \wedge q) \qquad \text{and} \qquad \neg p \vee \neg q$$

2. Let B be the set of all biology majors and let $G(x)$ be the predicate "x is required to take geometry." Write each statement below using quantifiers over the domain B and the predicate $G(x)$, and then match any statements that are equivalent in meaning.

   (a) There is no biology major who is required to take geometry.

   (b) There is a biology major who is not required to take geometry.

   (c) There is no biology major who is not required to take geometry.

   (d) Every biology major is not required to take geometry.