MATH310 Groupwork 2022-07-12

NAME:

UID:

1. Identify the antecedent and consequent for each of the following conditional statements. Do not worry about whether anything is true or false!

   (a) If $x > 3$ then $x^2 > 9$.
   Antecedent:

   Consequent:

   (b) 2 divides a only if 2 divides $10a$.
   Antecedent:

   Consequent:

   (c) For $f(x)$ to be continuous it is sufficient for $f(x)$ to be differentiable.
   Antecedent:

   Consequent:

   (d) The sequence a_n is bounded whenever a_n converges.
   Antecedent:

   Consequent:

2. Fill in the truth table which shows that $P \longrightarrow (Q \longrightarrow R) \equiv (P \wedge Q) \longrightarrow R$:

P	Q	R	$Q \longrightarrow R$	$P \wedge Q$	$P \longrightarrow (Q \longrightarrow R)$	$(P \wedge Q) \longrightarrow R$

3. Write down the converse and the contrapositive of each of the following. Try to make these as coherent as possible: Do not worry about whether anything is true or false!

   (a) If n is even then n is not odd.
   Converse:

   Contrapositive:

   (b) If Alejandro gets an A then Amanda smiles and Charles doesn't jump.
   Converse:

   Contrapositive:

   (c) If $x > 2.1$ and x is an integer then $x \geq 3$.
   Converse:

   Contrapositive: