# Foundations of Mathematics <br> Thursday 10 September 2020 <br> Math 300 Sections 902, 905 <br> Concept Quiz 3.2 

## Answers to Concept Quiz 3.2

1. Contrapositives

Which (if any) of the following is a contrapositive of the statement $P \leftrightarrow Q$ ?

$$
\begin{aligned}
& \checkmark \neg P \leftrightarrow \neg Q . \\
& \times(P \wedge Q) \vee(\neg P \wedge \neg Q) . \\
& \checkmark \neg Q \leftrightarrow \neg P .
\end{aligned}
$$

2. More contrapositives

Which (if any) of the following is a contrapositive of the statement $A \rightarrow(B \vee C)$ ?
$\times(B \vee C) \rightarrow A$.
$\times \neg A \vee(\neg B \wedge \neg C)$.
$\checkmark \quad(\neg B \wedge \neg C) \rightarrow \neg A$.

