## Foundations of Mathematics Thursday 10 September 2020

## Answers to Concept Quiz 3.2

## 1. Contrapositives

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

$$\begin{array}{l} \checkmark \quad \neg P \leftrightarrow \neg Q. \\ \times \quad (P \wedge Q) \lor (\neg P \wedge \neg Q). \end{array}$$

$$\checkmark \neg Q \leftrightarrow \neg P.$$

## 2. More contrapositives

Which (if any) of the following is a contrapositive of the statement  $A \to (B \lor C)$ ?

$$\times$$
  $(B \lor C) \to A.$ 

$$\times \neg A \lor (\neg B \land \neg C)$$

 $\checkmark \ (\neg B \land \neg C) \to \neg A.$