Name: _____   **Signature:** _____   **Student Number:** _____

1. Express the following statements as propositional formulae, using the variable B to stand for "Bill is telling the truth" and the variable J to stand for "John is telling the truth".

  (a) Either Bill is telling the truth and John isn't, or John is telling the truth and Bill isn't.

   ANSWER:

  (b) Either John and Bill are both telling the truth, or neither of them is.

   ANSWER:

2. Let T stand for the statement "*I will buy the trousers*" and S for "*I will buy the shirt.*" What English sentences are represented by the following expressions?

  (a) $\neg T \wedge \neg S$.

   ANSWER:

  (b) $\neg T \vee \neg S$.

   ANSWER:

  (c) $\neg(T \wedge \neg S)$.

   ANSWER: