WEEK 4 QUIZ

TRUE/FALSE
1. Unrelated individuals infected with the same bacteria will present the same bacterial peptides on class II MHC. False

MULTIPLE CHOICE
2. Immature B cells that bind strongly to multivalent self-antigens undergo which of the following processes:
   A. Proliferation
   B. Receptor editing
   C. Class switch recombination
   D. Anergy
   E. A and B

3. MHC molecules are said to be polymorphic because:
   A. There are multiple genes encoding both class I and class II
   B. They change shape following binding to peptides
   C. There are multiple alleles with different sequence for each MHC gene in the population
   D. They are encoded by genes that are adjacent on the chromosome
   E. They are expressed mainly in polymorphonuclear leukocytes

FILL IN THE BLANK
4. The binding of TCR to class I MHC-peptide complexes is strengthened by the co-receptor __CD8__, whereas the binding of TCR to class II MHC-peptide is strengthened by the co-receptor __CD4__.

5. The absence of cell surface expression of __MHC class I__ following cellular infection by certain viruses can result in killing by NK cells. (Need BOTH MHC and class I in the answer)

SHORT ANSWER
6. At the large pre-B cell stage, cells express a pre-B cell receptor consisting of μ heavy chains that associate with ______ (composed of VpreB and λ5) and a dimer of the transmembrane proteins ______ and ______. Fill in the blanks above, and describe below the functions of these molecules.

   The surrogate light chain is required for the pre-B cell receptor to signal that successful heavy chain rearrangement has occurred. This step ensures allelic exclusion and further B cell development.
The Igα/Igβ dimer is necessary for the pre-B cell receptor to assemble properly, to reach the cell surface, and to transmit signals.