8. [6 pts - 3 each] The odds against IUP beating SRU are 7:3.
   (a) Rewrite this information, using the phrase “For every.”
   \[
   \text{For every 7 times IUP doesn’t beat SRU, there are 3 times they do.}
   \]
   (b) What is the probability that IUP doesn’t beat SRU?
   \[
   \frac{7}{10}
   \]

9. [12 pts - 4 each] Security codes at Fordsome Company consist of 2 letters followed by 3 digits and then another letter. (Do not simplify your answers to this question.)
   (a) How many different codes are possible if letters may be repeated but digits may not?
   \[
   26 \cdot 26 \cdot 10 \cdot 9 \cdot 8 \cdot 26
   \]
   (b) How many codes allowing both repeated letters and digits do not use the letters x, y, and z?
   \[
   23 \cdot 23 \cdot 10 \cdot 10 \cdot 10 \cdot 23
   \]
   (c) How many codes allowing both repeated letters and digits have the first and last letter the same?
   \[
   26 \cdot 26 \cdot 10 \cdot 10 \cdot 10 \cdot 1
   \]

10. [8 pts - 4 each] How many different rearrangements are there of the letters below? (Do not simplify.)
   (a) OSCAR JUMPED
   \[
   11!
   \]
   (b) ELMO GOES HOME
   \[
   \frac{12!}{3! \cdot 3! \cdot 2!}
   \]