True/False - No explanation needed. (For each: 1 point if correct, 0 points if not answered, -1 points if incorrect)

1. The coefficient of x^3y^2 in $(x+y)^6$ is 0 because $2+3 \neq 6$; yet, it appears twice in the expanded form of $(x+y)^5$. True/False

2. A counterexample is a situation where the hypotheses (conditions) of a statement are satisfied but the conclusion is false. True/False

Problems - Need justification.

1. How many ways are there to have 5 men and 9 women stand in a line so that no two men are standing next to each other? You don't need to write the actual integer, just a formula for the number. (10 points)