Q1. Prove that $\dfrac{(n+5)!}{(n+3)!} = n^2 + 9n + 20$

Q2. Solve the following equations where n $\in N$

(i) $\dbinom{n-1}{2} = 28$

(ii) $2!\,(n-2)! = 3!\,(n-3)!$

(ii) $\dbinom{4}{n-1} + \dbinom{4}{n} = 5$