Proof – 2021/20 GCE AS Pure Further Mathematics A

1. Nov/2021/Paper_Y531/01/No.7

Prove that $2^{3n} - 3^n$ is divisible by 5 for all integers $n \geqslant 1$. **[5]**

2. Nov/2020/Paper_Y531/01/No.6

Prove that $n! > 2^{2n}$ for all integers $n \geqslant 9$. **[5]**