

Senior Test 2 Question 1

- $(n-1)(n+1) = 5 \cdot 2^m$ 1 mark
- $m > 0$, so both factors are even 1 mark
- gcd is 2, so one divisible by at most 2 1 mark
- $n-1 = 2$ or $n-1 = 10$ or $n+1 = 2$ or $n+1 = 10$ and see which cases give solutions 3 marks
- $n = 9$, which gives $m = 4$. Must give m or loses a mark. 1 mark