

# big sex man

Due: in ur mother

Released: out ur mother

We proceed with a direct proof, assuming  $x$  is an even integer.

|   |  |
|---|--|
| $x$ is an even integer                            | (given)                                    |
| $x = 2k$ for some $k \in \mathbb{Z}$              | (def of even)                              |
| $x^2 = (2k)^2$                                    | (square both sides of (2))                 |
| $x^2 = 4k^2$                                      | (simplify RHS of (3))                      |
| $x^2 + 25x = 4k^2 + 25(x)$                        | (add $25x$ to both sides of (4))           |
| $x^2 + 25x = 4k^2 + 25(2k)$                       | (substitute (2) into (5))                  |
| $x^2 + 25x = 4k^2 + 50k$                          | (simplify RHS of (6))                      |
| $x^2 + 25x + 27 = 4k^2 + 50k + 27$                | (add 27 to both sides of (7))              |
| $x^2 + 25x + 27 = 2(2k^2 + 25k + 13) + 1$         | (factor RHS of (8))                        |
| $m = 2k^2 + 25k + 13$ for some $k \in \mathbb{Z}$ | (closure of mult and add in $\mathbb{Z}$ ) |
| $x^2 + 25x + 27 = 2m + 1$                         | (substitute (10) into (9))                 |
| $x^2 + 25x + 27$ is odd                           | (def of odd)                               |

Thus, by assuming that  $x$  is even, we have directly proven the statement that "If  $x$  is an even integer then  $x^2 + 25x + 27$  is odd"