

$$S.T \quad p(1) = \text{base case}$$

$$= 2 \cdot (4)^{2n+1} + 3(3n+1)$$

$$LHS = RHS$$

$$2 \cdot (4)^8 + (3)^{11} \cdot (19) = \frac{2 \cdot (4)^9 + 3 \cdot 4}{4}$$

Assume $p(k)$ is true

$$2 \cdot (4)^{2k+1} + 3(3k+1) = 17 \cdot 11n$$

$$2 \cdot 4^{(2k+1)} \div 17n - 3(3k+1)$$

$$P.T \quad 2 \cdot (4)^{2(k+1)+1} + 3(3(k+1)+1) = 17n$$

$$2 \cdot (4)^{2k+2+1} + 3(3k+3+1)$$

$$2 \cdot 4^{2k+1} \cdot 4 + 3(3k+4)$$

$$(17n - 3(3k+1)) \cdot 4 + 3(3k+4)$$

$$4^2(17n) - 4^2(3(3k+1)) + 3(3(3k+1))$$

$$4^2(17n) + 3(3k+1)(-4^2 + 3)$$

$$16 \cdot 17n + 3(3k+1)(-11)$$

$$27 \quad 16 \cdot 17n + 3(3k+1)(-11)$$