

Goal: Show $P(n)$ is true

Therefore, $P(n)$ is true for $n = 24, 25, 26, 27, 28$

Inductive Step

Inductive Hypothesis: $P(i)$ is true for $24 \leq i \leq k$, where $k \geq 28$.

Goal: Show that $P(k+1)$ is true, under this assumption.

$$k \geq 28, \text{ so } k-4 \geq 24$$

$$k+1 \geq 29, \quad k+1 - 5 \equiv k-4$$

By inductive hypothesis, since $24 \leq k-4 \leq k$, $P(k-4)$ is true.

$$\text{Therefore, } k-4 = 5x + 7y, \text{ and } k+1 = 5x + x + 7y.$$

Therefore $P(k+1)$ is true.

By the principle of strong mathematical induction, since $P(k)$ is true and

$P(k+1)$ is true, and $\bigwedge_{t=24}^k P(t) \rightarrow P(k+1)$ is true, 5 cent or

7 cent stamps can make 24 cent or more postage.