

## THE RAMSEY NUMBER FOR THETA GRAPH VERSUS A CLIQUE OF ORDER THREE AND FOUR

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### Abstract

For any two graphs  $F_1$  and  $F_2$ , the graph Ramsey number  $r(F_1, F_2)$  is the smallest positive integer  $N$  with the property that every graph on at least  $N$  vertices contains  $F_1$  or its complement contains  $F_2$  as a subgraph. In this paper, we consider the Ramsey numbers for theta-complete graphs. We determine  $r(\theta_n, K_m)$  for  $m = 2, 3, 4$  and  $n > m$ . More specifically, we establish that  $r(\theta_n, K_m) = (n - 1)(m - 1) + 1$  for  $m = 3, 4$  and  $n > m$ .

**Keywords:** Ramsey number, independent set, theta graph, complete graph.

**2010 Mathematics Subject Classification:** 05C55, 05C35.

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Received 7 December 2011

Revised 13 February 2013

Accepted 13 February 2013