

$Q(m,n)$

$Q(3,n)$

$$[Q1] \quad Q(3,2n) \geq 2$$

$$[Q2] \quad Q(3,3n) = 3, \quad n \geq 4$$

$$Q(3,3) = 1 \quad \text{trivial}$$

$$Q(3,4) = 2 = [Q1]$$

$$Q(3,5) = 1$$

$$Q(3,6) = 3$$

$$Q(3,7) = 1$$

$$Q(3,8) = 2 = [Q1]$$

$$Q(3,9) = 2$$

$$Q(3,10) = 2 = [Q1]$$

$$Q(3,11) = 2$$

$$Q(3,12) = 3 \quad [Q2]$$

$$Q(3,13) \geq 2$$

$Q(4,n)$

$$[Q3] \quad Q(4,2n) = 4, \quad n \geq 5$$

$$Q(4,4) = 2$$

$$Q(4,5) = 2$$

$$Q(4,6) = 3$$

$$Q(4,7) = 2$$

$$Q(4,8) = 3$$

$$Q(4,9) \geq 3$$

$$Q(4,10) = 4 \quad [Q3]$$

$$Q(4,11) \geq 2$$

$$Q(4,12) = 4 \quad [Q3]$$

$$Q(4,14) = 4 \quad [Q3]$$

$$Q(4,15) \geq 3$$

$$Q(4,16) = 4 \quad [Q3]$$

$Q(5,n)$

$$Q(5,5) = 2$$

$$Q(5,6) = 3$$

$$Q(5,7) \geq 2$$

$$Q(5,8) \geq 4$$

$$Q(5,10) = 5$$

$$Q(5,12) = 5$$

$Q(6,n)$

$$Q(6,6) \geq 3$$

$$Q(6,7) \geq 2$$

$$Q(6,8) \geq 4$$

$$Q(6,9) \geq 2$$

$$Q(6,10) \geq 5$$

$$Q(6,12) = 6$$