

(7)

Problem 15

$$a \cdot b = 468$$

$$(a-r)(b-q) = ab - aq - rb + rq = 462 \quad (1)$$

$$(a-2r)(b-2q) = ab - 2aq - 2rb + 4rq = 384 \quad (2)$$

$$(a-3r)(b-3q) = ab - 3aq - 3rb + 9rq = ?$$

$$\begin{cases} 468 - aq - rb + rq = 462 \\ 468 - 2aq - 2rb + 4rq = 384 \end{cases}$$

$$\begin{cases} rq - (aq + rb) = -6 & | -4 \\ 4rq - 2(aq + rb) = -84 \end{cases}$$

$$\begin{cases} -4rq + 4(aq + rb) = 24 \\ 4rq - 2(aq + rb) = -84 \end{cases}$$

$$2(aq + rb) = -60$$

$$\boxed{aq + rb = -30}$$

$$rq = -6 - 30 = -36$$

$$(a-3r)(b-3q) = 468 - 3(-30) + 9 \cdot (-36) =$$

234