 # we try 41·43 is 1763.

for a **from** 1 **to** 1762 **do**
 if $a^2 + a + 41$ **mod** $1763 = 0$ **then** $print(a)$;
 end if;
 end do;

41

861

901

1721 **(1)**

a

1763 **(2)**

 # so we see that

$41^2 + 41 + 41$

1763 **(3)**

 # and

1763 **mod** 1763

0 **(4)**

 # check
#similarly,

$861^2 + 861 + 41$

742223 **(5)**

742223 **mod** 1763

0 **(6)**

 # again, check

 # again similarly,

$901^2 + 901 + 41$

812743 **(7)**

812743 **mod** $41 \cdot 43$

0 **(8)**

 # super check

$1721^2 + 1721 + 41$

2963603 **(9)**

2963603 **mod** 41

0 **(10)**

 # so we have $b^2 + b + 41$ **mod** $41 \cdot 43 \equiv 0$ **for** $b \in \{41, 861, 901, 1721\}$.
 # We are very excited about this result. by Matt C. Anderson
 # 11-3-2020