

#### 4.3.4.8 Example 5 RSA

①  $p = 17$        $q = 11$

②  $n = p \times q = 17 \times 11 = 187$

③  $\phi(n) = 16 \times 10 = 160$

③  $e$       1 2 3 5 7  
            x x ✓ x ✓

$e = 7$

④  $e \times d \bmod \phi(n) = 1$

$$d = \frac{k \phi(n) + 1}{e}$$
$$= \frac{160k + 1}{7}$$

k	d
1	23 ✓

$d = 23$