

The First 100 Prime Empirical Proof in Long Division

P₁ 2

Prime numbers are defined as numbers greater than 1 that have no positive divisors other than 1 and themselves. 1 is self-Prime. The sequence of Prime numbers starts with 2, 3, 5, 7, 11, and so on.

A Prime is any number only divisible by 1 and itself searching first that a number is not even if it divides by 2, optimising using a Vignette Sieve that if not only up to $n/2$ needs to be tested as a divisor, then 3 if not only up to $n/3$ needs to be tested as divisor, $n/5$, $n/7$, $n/11$, $n/13$, $n/17$, $n/19$, $n/23$, $n/29$, $n/31$ & so on so that only divisibility by a Prime needs to be checked up to \sqrt{n} for to prove not Prime & since for example we have ruled out that the number is a factor of three or two so there is no natural number greater than $n/3$ that can be a divisor.

Explanation: This prime is only divisible by 1 and itself. No division required.

<https://github.com/Willtech/Prime>

P₂ 3

$$3 \div 2 = 1 \text{ remainder } 1$$

$$\begin{array}{r} 1 \\ 2 \overline{) 3} \\ \underline{2} \\ 1 \leftarrow \text{remainder} \end{array}$$

P₃ 5

$$5 \div 2 = 2 \text{ remainder } 1$$

$$\begin{array}{r} 2 \\ 2 \overline{) 5} \\ \underline{4} \\ 1 \leftarrow \text{remainder} \end{array}$$

P₄ 7

$$7 \div 2 = 3 \text{ remainder } 1$$

$$\begin{array}{r} 3 \\ 2 \overline{) 7} \\ \underline{6} \\ 1 \end{array}$$

1 ← remainder

P₅ 11

$$11 \div 2 = 5 \text{ remainder } 1$$

$$\begin{array}{r} 5 \\ 2 \mid 11 \\ \underline{10} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$11 \div 3 = 3 \text{ remainder } 2$$

$$\begin{array}{r} 3 \\ 3 \mid 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

P₆ 13

$$13 \div 2 = 6 \text{ remainder } 1$$

$$\begin{array}{r} 6 \\ 2 \mid 13 \\ \underline{12} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$13 \div 3 = 4 \text{ remainder } 1$$

$$\begin{array}{r} 4 \\ 3 \mid 13 \\ \underline{12} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

P₇ 17

$$17 \div 2 = 8 \text{ remainder } 1$$

$$\begin{array}{r} 8 \\ 2 \mid 17 \\ \underline{16} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$17 \div 3 = 5 \text{ remainder } 2$$

$$\begin{array}{r} 5 \\ 3 \mid 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

P₈ 19

$$19 \div 2 = 9 \text{ remainder } 1$$

$$\begin{array}{r} 9 \\ 2 \mid 19 \\ \underline{18} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$19 \div 3 = 6 \text{ remainder } 1$$

$$\begin{array}{r} 6 \\ 3 \mid 19 \\ \underline{18} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

P₉ 23

$$23 \div 2 = 11 \text{ remainder } 1$$

$$\begin{array}{r} 11 \\ 2 \overline{) 23} \\ \underline{2} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$23 \div 3 = 7 \text{ remainder } 2$$

$$\begin{array}{r} 7 \\ 3 \overline{) 23} \\ \underline{21} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

P₁₀ 29

$$29 \div 2 = 14 \text{ remainder } 1$$

$$\begin{array}{r} 14 \\ 2 \mid 29 \\ \underline{2} \\ 9 \\ \underline{8} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$29 \div 3 = 9 \text{ remainder } 2$$

$$\begin{array}{r} 9 \\ 3 \mid 29 \\ \underline{27} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$29 \div 5 = 5 \text{ remainder } 4$$

$$\begin{array}{r} 5 \\ 5 \mid 29 \\ \underline{25} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

P₁₁ 31

$$31 \div 2 = 15 \text{ remainder } 1$$

$$\begin{array}{r} 15 \\ 2 \overline{) 31} \\ \underline{2} \\ - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$31 \div 3 = 10 \text{ remainder } 1$$

$$\begin{array}{r} 10 \\ 3 \overline{) 31} \\ \underline{3} \\ - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$31 \div 5 = 6 \text{ remainder } 1$$

$$\begin{array}{r} 6 \\ 5 \overline{) 31} \\ \underline{30} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

P₁₂ 37

$$37 \div 2 = 18 \text{ remainder } 1$$

$$\begin{array}{r} 18 \\ 2 \overline{) 37} \\ \underline{2} \\ - \\ 17 \\ \underline{16} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$37 \div 3 = 12 \text{ remainder } 1$$

$$\begin{array}{r} 12 \\ 3 \overline{) 37} \\ \underline{3} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$37 \div 5 = 7 \text{ remainder } 2$$

$$\begin{array}{r} 7 \\ 5 \overline{) 37} \\ \underline{35} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

P₁₃ 41

$$41 \div 2 = 20 \text{ remainder } 1$$

$$\begin{array}{r} 20 \\ 2 \mid 41 \\ \underline{4} \\ 1 \\ \underline{0} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$41 \div 3 = 13 \text{ remainder } 2$$

$$\begin{array}{r} 13 \\ 3 \mid 41 \\ \underline{3} \\ 11 \\ \underline{9} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$41 \div 5 = 8 \text{ remainder } 1$$

$$\begin{array}{r} 8 \\ 5 \mid 41 \\ \underline{40} \\ 1 \leftarrow \text{remainder} \end{array}$$

P₁₄ 43

$$43 \div 2 = 21 \text{ remainder } 1$$

$$\begin{array}{r} 21 \\ 2 \mid 43 \\ \underline{4} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$43 \div 3 = 14 \text{ remainder } 1$$

$$\begin{array}{r} 14 \\ 3 \mid 43 \\ \underline{3} \\ - \\ 13 \\ \underline{12} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$43 \div 5 = 8 \text{ remainder } 3$$

$$\begin{array}{r} 8 \\ 5 \mid 43 \\ \underline{40} \\ - \\ 3 \leftarrow \text{remainder} \end{array}$$

P₁₅ 47

$$47 \div 2 = 23 \text{ remainder } 1$$

$$\begin{array}{r} 23 \\ 2 \mid 47 \\ \underline{4} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$47 \div 3 = 15 \text{ remainder } 2$$

$$\begin{array}{r} 15 \\ 3 \mid 47 \\ \underline{3} \\ - \\ 17 \\ \underline{15} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$47 \div 5 = 9 \text{ remainder } 2$$

$$\begin{array}{r} 9 \\ 5 \mid 47 \\ \underline{45} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

P₁₆ 53

$$53 \div 2 = 26 \text{ remainder } 1$$

$$\begin{array}{r} 26 \\ 2 \mid 53 \\ \underline{4} \\ 13 \\ \underline{12} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$53 \div 3 = 17 \text{ remainder } 2$$

$$\begin{array}{r} 17 \\ 3 \mid 53 \\ \underline{3} \\ 23 \\ \underline{21} \\ 2 \\ 2 \leftarrow \text{remainder} \end{array}$$

$$53 \div 5 = 10 \text{ remainder } 3$$

$$\begin{array}{r} 10 \\ 5 \mid 53 \\ \underline{5} \\ 3 \\ \underline{0} \\ 3 \\ 3 \leftarrow \text{remainder} \end{array}$$

$$53 \div 7 = 7 \text{ remainder } 4$$

$$\begin{array}{r} 7 \\ 7 \mid 53 \\ \underline{49} \\ 4 \\ 4 \leftarrow \text{remainder} \end{array}$$

P₁₇ 59

$$59 \div 2 = 29 \text{ remainder } 1$$

$$\begin{array}{r} 29 \\ 2 \overline{) 59} \\ \underline{4} \\ 19 \\ \underline{18} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$59 \div 3 = 19 \text{ remainder } 2$$

$$\begin{array}{r} 19 \\ 3 \overline{) 59} \\ \underline{3} \\ 29 \\ \underline{27} \\ 2 \end{array} \leftarrow \text{remainder}$$

$$59 \div 5 = 11 \text{ remainder } 4$$

$$\begin{array}{r} 11 \\ 5 \overline{) 59} \\ \underline{5} \\ 9 \\ \underline{5} \\ 4 \end{array} \leftarrow \text{remainder}$$

$$59 \div 7 = 8 \text{ remainder } 3$$

$$\begin{array}{r} 8 \\ 7 \overline{) 59} \\ \underline{56} \\ 3 \end{array} \leftarrow \text{remainder}$$

P₁₈ 61

$$61 \div 2 = 30 \text{ remainder } 1$$

$$\begin{array}{r} 30 \\ 2 \mid 61 \\ \underline{6} \\ 1 \\ 0 \\ \underline{-} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$61 \div 3 = 20 \text{ remainder } 1$$

$$\begin{array}{r} 20 \\ 3 \mid 61 \\ \underline{6} \\ 1 \\ 0 \\ \underline{-} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$61 \div 5 = 12 \text{ remainder } 1$$

$$\begin{array}{r} 12 \\ 5 \mid 61 \\ \underline{5} \\ 11 \\ \underline{10} \\ 1 \\ \underline{-} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$61 \div 7 = 8 \text{ remainder } 5$$

$$\begin{array}{r} 8 \\ 7 \mid 61 \\ \underline{56} \\ 5 \\ \underline{-} \\ 5 \leftarrow \text{remainder} \end{array}$$

P₁₉ 67

$$67 \div 2 = 33 \text{ remainder } 1$$

$$\begin{array}{r} 33 \\ 2 \overline{) 67} \\ \underline{6} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$67 \div 3 = 22 \text{ remainder } 1$$

$$\begin{array}{r} 22 \\ 3 \overline{) 67} \\ \underline{6} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$67 \div 5 = 13 \text{ remainder } 2$$

$$\begin{array}{r} 13 \\ 5 \overline{) 67} \\ \underline{5} \\ - \\ 17 \\ \underline{15} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$67 \div 7 = 9 \text{ remainder } 4$$

$$\begin{array}{r} 9 \\ 7 \overline{) 67} \\ \underline{63} \\ - \\ 4 \leftarrow \text{remainder} \end{array}$$

P₂₀ 71

$$71 \div 2 = 35 \text{ remainder } 1$$

$$\begin{array}{r} 35 \\ 2 \overline{) 71} \\ \underline{6} \\ 11 \\ \underline{10} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$71 \div 3 = 23 \text{ remainder } 2$$

$$\begin{array}{r} 23 \\ 3 \overline{) 71} \\ \underline{6} \\ 11 \\ \underline{9} \\ 2 \\ 2 \leftarrow \text{remainder} \end{array}$$

$$71 \div 5 = 14 \text{ remainder } 1$$

$$\begin{array}{r} 14 \\ 5 \overline{) 71} \\ \underline{5} \\ 21 \\ \underline{20} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$71 \div 7 = 10 \text{ remainder } 1$$

$$\begin{array}{r} 10 \\ 7 \overline{) 71} \\ \underline{7} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

0

-

1 \leftarrow remainder

P₂₁ 73

$$73 \div 2 = 36 \text{ remainder } 1$$

$$\begin{array}{r} 36 \\ 2 \mid 73 \\ \underline{6} \\ 13 \\ \underline{12} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$73 \div 3 = 24 \text{ remainder } 1$$

$$\begin{array}{r} 24 \\ 3 \mid 73 \\ \underline{6} \\ 13 \\ \underline{12} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$73 \div 5 = 14 \text{ remainder } 3$$

$$\begin{array}{r} 14 \\ 5 \mid 73 \\ \underline{5} \\ 23 \\ \underline{20} \\ 3 \\ 3 \leftarrow \text{remainder} \end{array}$$

$$73 \div 7 = 10 \text{ remainder } 3$$

$$\begin{array}{r} 10 \\ 7 \mid 73 \\ \underline{7} \\ 3 \\ 3 \leftarrow \text{remainder} \end{array}$$

0
-
3 ← remainder

P₂₂ 79

$$79 \div 2 = 39 \text{ remainder } 1$$

$$\begin{array}{r} 39 \\ 2 \overline{) 79} \\ \underline{6} \\ 19 \\ \underline{18} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$79 \div 3 = 26 \text{ remainder } 1$$

$$\begin{array}{r} 26 \\ 3 \overline{) 79} \\ \underline{6} \\ 19 \\ \underline{18} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$79 \div 5 = 15 \text{ remainder } 4$$

$$\begin{array}{r} 15 \\ 5 \overline{) 79} \\ \underline{5} \\ 29 \\ \underline{25} \\ 4 \end{array} \leftarrow \text{remainder}$$

$$79 \div 7 = 11 \text{ remainder } 2$$

$$\begin{array}{r} 11 \\ 7 \overline{) 79} \\ \underline{7} \\ 9 \end{array}$$

7
-
2 ← remainder

P₂₃ 83

$$83 \div 2 = 41 \text{ remainder } 1$$

$$\begin{array}{r} 41 \\ 2 \overline{) 83} \\ \underline{8} \\ 3 \\ \underline{2} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$83 \div 3 = 27 \text{ remainder } 2$$

$$\begin{array}{r} 27 \\ 3 \overline{) 83} \\ \underline{6} \\ 23 \\ \underline{21} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$83 \div 5 = 16 \text{ remainder } 3$$

$$\begin{array}{r} 16 \\ 5 \overline{) 83} \\ \underline{5} \\ 33 \\ \underline{30} \\ 3 \leftarrow \text{remainder} \end{array}$$

$$83 \div 7 = 11 \text{ remainder } 6$$

$$\begin{array}{r} 11 \\ 7 \overline{) 83} \\ \underline{7} \\ 13 \end{array}$$

7
-
6 ← remainder

P₂₄ 89

$$89 \div 2 = 44 \text{ remainder } 1$$

$$\begin{array}{r} 44 \\ 2 \overline{) 89} \\ \underline{8} \\ 9 \\ \underline{8} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$89 \div 3 = 29 \text{ remainder } 2$$

$$\begin{array}{r} 29 \\ 3 \overline{) 89} \\ \underline{6} \\ 29 \\ \underline{27} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$89 \div 5 = 17 \text{ remainder } 4$$

$$\begin{array}{r} 17 \\ 5 \overline{) 89} \\ \underline{5} \\ 39 \\ \underline{35} \\ 4 \leftarrow \text{remainder} \end{array}$$

$$89 \div 7 = 12 \text{ remainder } 5$$

$$\begin{array}{r} 12 \\ 7 \overline{) 89} \\ \underline{7} \\ 19 \end{array}$$

14

--

5 ← remainder

P₂₅ 97

$$97 \div 2 = 48 \text{ remainder } 1$$

$$\begin{array}{r} 48 \\ 2 \overline{) 97} \\ \underline{8} \\ 17 \\ \underline{16} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$97 \div 3 = 32 \text{ remainder } 1$$

$$\begin{array}{r} 32 \\ 3 \overline{) 97} \\ \underline{9} \\ 7 \\ \underline{6} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$97 \div 5 = 19 \text{ remainder } 2$$

$$\begin{array}{r} 19 \\ 5 \overline{) 97} \\ \underline{5} \\ 47 \\ \underline{45} \\ 2 \end{array} \leftarrow \text{remainder}$$

$$97 \div 7 = 13 \text{ remainder } 6$$

$$\begin{array}{r} 13 \\ 7 \overline{) 97} \\ \underline{7} \\ 27 \end{array}$$

21

--

6 ← remainder

P₂₆ 101

$$101 \div 2 = 50 \text{ remainder } 1$$

$$\begin{array}{r} 50 \\ 2 \mid 101 \\ \underline{10} \\ 1 \\ 0 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$101 \div 3 = 33 \text{ remainder } 2$$

$$\begin{array}{r} 33 \\ 3 \mid 101 \\ \underline{9} \\ - \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$101 \div 5 = 20 \text{ remainder } 1$$

$$\begin{array}{r} 20 \\ 5 \mid 101 \\ \underline{10} \\ - \\ 1 \\ 0 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$101 \div 7 = 14 \text{ remainder } 3$$

$$\begin{array}{r} 14 \\ 7 \mid 101 \\ \underline{7} \\ - \\ 31 \end{array}$$

28

--

3 ← remainder

P₂₇ 103

$$103 \div 2 = 51 \text{ remainder } 1$$

$$\begin{array}{r} 51 \\ 2 \mid 103 \\ \underline{10} \\ 3 \\ \underline{2} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$103 \div 3 = 34 \text{ remainder } 1$$

$$\begin{array}{r} 34 \\ 3 \mid 103 \\ \underline{9} \\ 13 \\ \underline{12} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$103 \div 5 = 20 \text{ remainder } 3$$

$$\begin{array}{r} 20 \\ 5 \mid 103 \\ \underline{10} \\ 3 \\ \underline{0} \\ 3 \leftarrow \text{remainder} \end{array}$$

$$103 \div 7 = 14 \text{ remainder } 5$$

$$\begin{array}{r} 14 \\ 7 \mid 103 \\ \underline{7} \\ 33 \end{array}$$

28

--

5 ← remainder

P₂₈ 107

$$107 \div 2 = 53 \text{ remainder } 1$$

$$\begin{array}{r} 53 \\ 2 \mid 107 \\ \underline{10} \\ - - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$107 \div 3 = 35 \text{ remainder } 2$$

$$\begin{array}{r} 35 \\ 3 \mid 107 \\ \underline{9} \\ - \\ 17 \\ \underline{15} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$107 \div 5 = 21 \text{ remainder } 2$$

$$\begin{array}{r} 21 \\ 5 \mid 107 \\ \underline{10} \\ - - \\ 7 \\ \underline{5} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$107 \div 7 = 15 \text{ remainder } 2$$

$$\begin{array}{r} 15 \\ 7 \mid 107 \\ \underline{7} \\ - \\ 37 \end{array}$$

35

--

2 ← remainder

P₂₉ 109

$$109 \div 2 = 54 \text{ remainder } 1$$

$$\begin{array}{r} 54 \\ 2 \mid 109 \\ \underline{10} \\ - \\ 9 \\ 8 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$109 \div 3 = 36 \text{ remainder } 1$$

$$\begin{array}{r} 36 \\ 3 \mid 109 \\ \underline{9} \\ - \\ 19 \\ 18 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$109 \div 5 = 21 \text{ remainder } 4$$

$$\begin{array}{r} 21 \\ 5 \mid 109 \\ \underline{10} \\ - \\ 9 \\ 5 \\ - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$109 \div 7 = 15 \text{ remainder } 4$$

$$\begin{array}{r} 15 \\ 7 \mid 109 \\ \underline{7} \\ - \\ 39 \end{array}$$

35

--

4 ← remainder

P₃₀ 113

$$113 \div 2 = 56 \text{ remainder } 1$$

$$\begin{array}{r} 56 \\ 2 \mid 113 \\ \underline{10} \\ 13 \\ \underline{12} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$113 \div 3 = 37 \text{ remainder } 2$$

$$\begin{array}{r} 37 \\ 3 \mid 113 \\ \underline{9} \\ 23 \\ \underline{21} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$113 \div 5 = 22 \text{ remainder } 3$$

$$\begin{array}{r} 22 \\ 5 \mid 113 \\ \underline{10} \\ 13 \\ \underline{10} \\ 3 \leftarrow \text{remainder} \end{array}$$

$$113 \div 7 = 16 \text{ remainder } 1$$

$$\begin{array}{r} 16 \\ 7 \mid 113 \\ \underline{7} \\ 43 \end{array}$$

42

--

1 ← remainder

P₃₁ 127

$$127 \div 2 = 63 \text{ remainder } 1$$

$$\begin{array}{r} 63 \\ 2 \mid 127 \\ \underline{12} \\ 7 \\ \underline{6} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$127 \div 3 = 42 \text{ remainder } 1$$

$$\begin{array}{r} 42 \\ 3 \mid 127 \\ \underline{12} \\ 7 \\ \underline{6} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$127 \div 5 = 25 \text{ remainder } 2$$

$$\begin{array}{r} 25 \\ 5 \mid 127 \\ \underline{10} \\ 27 \\ \underline{25} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$127 \div 7 = 18 \text{ remainder } 1$$

$$\begin{array}{r} 18 \\ 7 \mid 127 \\ \underline{7} \\ - \\ 57 \end{array}$$

56

--

1 ← remainder

$127 \div 11 = 11$ remainder 6

11

11 | 127

11

--

17

11

--

6 ← remainder

P₃₂ 131

$$131 \div 2 = 65 \text{ remainder } 1$$

$$\begin{array}{r} 65 \\ 2 \mid 131 \\ \underline{12} \\ -- \\ 11 \\ \underline{10} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$131 \div 3 = 43 \text{ remainder } 2$$

$$\begin{array}{r} 43 \\ 3 \mid 131 \\ \underline{12} \\ -- \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$131 \div 5 = 26 \text{ remainder } 1$$

$$\begin{array}{r} 26 \\ 5 \mid 131 \\ \underline{10} \\ -- \\ 31 \\ \underline{30} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$131 \div 7 = 18 \text{ remainder } 5$$

$$\begin{array}{r} 18 \\ 7 \mid 131 \\ \underline{7} \\ - \\ 61 \end{array}$$

56

--

5 ← remainder

$131 \div 11 = 11 \text{ remainder } 10$

11

11 | 131

11

--

21

11

--

10 ← remainder

P₃₃ 137

$$137 \div 2 = 68 \text{ remainder } 1$$

$$\begin{array}{r} 68 \\ 2 \mid 137 \\ \underline{12} \\ 17 \\ \underline{16} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$137 \div 3 = 45 \text{ remainder } 2$$

$$\begin{array}{r} 45 \\ 3 \mid 137 \\ \underline{12} \\ 17 \\ \underline{15} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$137 \div 5 = 27 \text{ remainder } 2$$

$$\begin{array}{r} 27 \\ 5 \mid 137 \\ \underline{10} \\ 37 \\ \underline{35} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$137 \div 7 = 19 \text{ remainder } 4$$

$$\begin{array}{r} 19 \\ 7 \mid 137 \\ \underline{7} \\ - \\ 67 \end{array}$$

63

--

4 ← remainder

$137 \div 11 = 12 \text{ remainder } 5$

12

11 | 137

11

--

27

22

--

5 ← remainder

P₃₄ 139

$$139 \div 2 = 69 \text{ remainder } 1$$

$$\begin{array}{r} 69 \\ 2 \mid 139 \\ \underline{12} \\ -- \\ 19 \\ \underline{18} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$139 \div 3 = 46 \text{ remainder } 1$$

$$\begin{array}{r} 46 \\ 3 \mid 139 \\ \underline{12} \\ -- \\ 19 \\ \underline{18} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$139 \div 5 = 27 \text{ remainder } 4$$

$$\begin{array}{r} 27 \\ 5 \mid 139 \\ \underline{10} \\ -- \\ 39 \\ \underline{35} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$139 \div 7 = 19 \text{ remainder } 6$$

$$\begin{array}{r} 19 \\ 7 \mid 139 \\ \underline{7} \\ - \\ 69 \end{array}$$

63

--

6 ← remainder

$139 \div 11 = 12 \text{ remainder } 7$

12

11 | 139

11

--

29

22

--

7 ← remainder

P₃₅ 149

$$149 \div 2 = 74 \text{ remainder } 1$$

$$\begin{array}{r} 74 \\ 2 \mid 149 \\ \underline{14} \\ - - \\ 9 \\ 8 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$149 \div 3 = 49 \text{ remainder } 2$$

$$\begin{array}{r} 49 \\ 3 \mid 149 \\ \underline{12} \\ - - \\ 29 \\ 27 \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$149 \div 5 = 29 \text{ remainder } 4$$

$$\begin{array}{r} 29 \\ 5 \mid 149 \\ \underline{10} \\ - - \\ 49 \\ 45 \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$149 \div 7 = 21 \text{ remainder } 2$$

$$\begin{array}{r} 21 \\ 7 \mid 149 \\ \underline{14} \\ - - \\ 9 \end{array}$$

7

-

2 \leftarrow remainder

$149 \div 11 = 13$ remainder 6

13

11 | 149

11

--

39

33

--

6 \leftarrow remainder

P₃₆ 151

$$151 \div 2 = 75 \text{ remainder } 1$$

$$\begin{array}{r} 75 \\ 2 \mid 151 \\ \underline{14} \\ - - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$151 \div 3 = 50 \text{ remainder } 1$$

$$\begin{array}{r} 50 \\ 3 \mid 151 \\ \underline{15} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$151 \div 5 = 30 \text{ remainder } 1$$

$$\begin{array}{r} 30 \\ 5 \mid 151 \\ \underline{15} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$151 \div 7 = 21 \text{ remainder } 4$$

$$\begin{array}{r} 21 \\ 7 \mid 151 \\ \underline{14} \\ - - \\ 11 \end{array}$$

7

-

4 \leftarrow remainder

$151 \div 11 = 13$ remainder 8

13

11 | 151

11

--

41

33

--

8 \leftarrow remainder

P₃₇ 157

$$157 \div 2 = 78 \text{ remainder } 1$$

$$\begin{array}{r} 78 \\ 2 \mid 157 \\ 14 \\ \hline 17 \\ 16 \\ \hline 1 \leftarrow \text{remainder} \end{array}$$

$$157 \div 3 = 52 \text{ remainder } 1$$

$$\begin{array}{r} 52 \\ 3 \mid 157 \\ 15 \\ \hline 7 \\ 6 \\ \hline 1 \leftarrow \text{remainder} \end{array}$$

$$157 \div 5 = 31 \text{ remainder } 2$$

$$\begin{array}{r} 31 \\ 5 \mid 157 \\ 15 \\ \hline 7 \\ 5 \\ \hline 2 \leftarrow \text{remainder} \end{array}$$

$$157 \div 7 = 22 \text{ remainder } 3$$

$$\begin{array}{r} 22 \\ 7 \mid 157 \\ 14 \\ \hline 17 \end{array}$$

14

--

3 ← remainder

$157 \div 11 = 14 \text{ remainder } 3$

14

11 | 157

11

--

47

44

--

3 ← remainder

P₃₈ 163

$$163 \div 2 = 81 \text{ remainder } 1$$

$$\begin{array}{r} 81 \\ 2 \mid 163 \\ \underline{16} \\ -- \\ 3 \\ 2 \\ \underline{-} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$163 \div 3 = 54 \text{ remainder } 1$$

$$\begin{array}{r} 54 \\ 3 \mid 163 \\ \underline{15} \\ -- \\ 13 \\ 12 \\ \underline{-} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$163 \div 5 = 32 \text{ remainder } 3$$

$$\begin{array}{r} 32 \\ 5 \mid 163 \\ \underline{15} \\ -- \\ 13 \\ 10 \\ \underline{-} \\ 3 \leftarrow \text{remainder} \end{array}$$

$$163 \div 7 = 23 \text{ remainder } 2$$

$$\begin{array}{r} 23 \\ 7 \mid 163 \\ \underline{14} \\ -- \\ 23 \end{array}$$

21

--

2 ← remainder

$163 \div 11 = 14 \text{ remainder } 9$

14

11 | 163

11

--

53

44

--

9 ← remainder

P₃₉ 167

$$167 \div 2 = 83 \text{ remainder } 1$$

$$\begin{array}{r} 83 \\ 2 \mid 167 \\ \underline{16} \\ -- \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$167 \div 3 = 55 \text{ remainder } 2$$

$$\begin{array}{r} 55 \\ 3 \mid 167 \\ \underline{15} \\ -- \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$167 \div 5 = 33 \text{ remainder } 2$$

$$\begin{array}{r} 33 \\ 5 \mid 167 \\ \underline{15} \\ -- \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$167 \div 7 = 23 \text{ remainder } 6$$

$$\begin{array}{r} 23 \\ 7 \mid 167 \\ \underline{14} \\ -- \\ 27 \end{array}$$

21

--

6 ← remainder

$167 \div 11 = 15 \text{ remainder } 2$

15

11 | 167

11

--

57

55

--

2 ← remainder

P₄₀ 173

$$173 \div 2 = 86 \text{ remainder } 1$$

$$\begin{array}{r} 86 \\ 2 \mid 173 \\ \underline{16} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$173 \div 3 = 57 \text{ remainder } 2$$

$$\begin{array}{r} 57 \\ 3 \mid 173 \\ \underline{15} \\ -- \\ 23 \\ \underline{21} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$173 \div 5 = 34 \text{ remainder } 3$$

$$\begin{array}{r} 34 \\ 5 \mid 173 \\ \underline{15} \\ -- \\ 23 \\ \underline{20} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$173 \div 7 = 24 \text{ remainder } 5$$

$$\begin{array}{r} 24 \\ 7 \mid 173 \\ \underline{14} \\ -- \\ 33 \end{array}$$

28

--

5 ← remainder

$173 \div 11 = 15 \text{ remainder } 8$

15

11 | 173

11

--

63

55

--

8 ← remainder

$173 \div 13 = 13 \text{ remainder } 4$

13

13 | 173

13

--

43

39

--

4 ← remainder

P₄₁ 179

$$179 \div 2 = 89 \text{ remainder } 1$$

$$\begin{array}{r} 89 \\ 2 \mid 179 \\ \underline{16} \\ -- \\ 19 \\ \underline{18} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$179 \div 3 = 59 \text{ remainder } 2$$

$$\begin{array}{r} 59 \\ 3 \mid 179 \\ \underline{15} \\ -- \\ 29 \\ \underline{27} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$179 \div 5 = 35 \text{ remainder } 4$$

$$\begin{array}{r} 35 \\ 5 \mid 179 \\ \underline{15} \\ -- \\ 29 \\ \underline{25} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$179 \div 7 = 25 \text{ remainder } 4$$

$$\begin{array}{r} 25 \\ 7 \mid 179 \\ \underline{14} \\ -- \\ 39 \end{array}$$

35

--

4 ← remainder

$179 \div 11 = 16 \text{ remainder } 3$

16

11 | 179

11

--

69

66

--

3 ← remainder

$179 \div 13 = 13 \text{ remainder } 10$

13

13 | 179

13

--

49

39

--

10 ← remainder

P₄₂ 181

$$181 \div 2 = 90 \text{ remainder } 1$$

$$\begin{array}{r} 90 \\ 2 \mid 181 \\ \underline{18} \\ -- \\ 1 \\ 0 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$181 \div 3 = 60 \text{ remainder } 1$$

$$\begin{array}{r} 60 \\ 3 \mid 181 \\ \underline{18} \\ -- \\ 1 \\ 0 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$181 \div 5 = 36 \text{ remainder } 1$$

$$\begin{array}{r} 36 \\ 5 \mid 181 \\ \underline{15} \\ -- \\ 31 \\ \underline{30} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$181 \div 7 = 25 \text{ remainder } 6$$

$$\begin{array}{r} 25 \\ 7 \mid 181 \\ \underline{14} \\ -- \\ 41 \end{array}$$

35

--

6 \leftarrow remainder

$181 \div 11 = 16$ remainder 5

16

11 | 181

11

--

71

66

--

5 \leftarrow remainder

$181 \div 13 = 13$ remainder 12

13

13 | 181

13

--

51

39

--

12 \leftarrow remainder

P₄₃ 191

$$191 \div 2 = 95 \text{ remainder } 1$$

$$\begin{array}{r} 95 \\ 2 \mid 191 \\ \underline{18} \\ -- \\ 11 \\ \underline{10} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$191 \div 3 = 63 \text{ remainder } 2$$

$$\begin{array}{r} 63 \\ 3 \mid 191 \\ \underline{18} \\ -- \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$191 \div 5 = 38 \text{ remainder } 1$$

$$\begin{array}{r} 38 \\ 5 \mid 191 \\ \underline{15} \\ -- \\ 41 \\ \underline{40} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$191 \div 7 = 27 \text{ remainder } 2$$

$$\begin{array}{r} 27 \\ 7 \mid 191 \\ \underline{14} \\ -- \\ 51 \end{array}$$

49

--

2 ← remainder

$191 \div 11 = 17 \text{ remainder } 4$

17

11 | 191

11

--

81

77

--

4 ← remainder

$191 \div 13 = 14 \text{ remainder } 9$

14

13 | 191

13

--

61

52

--

9 ← remainder

P₄₄ 193

$$193 \div 2 = 96 \text{ remainder } 1$$

$$\begin{array}{r} 96 \\ 2 \mid 193 \\ \underline{18} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$193 \div 3 = 64 \text{ remainder } 1$$

$$\begin{array}{r} 64 \\ 3 \mid 193 \\ \underline{18} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$193 \div 5 = 38 \text{ remainder } 3$$

$$\begin{array}{r} 38 \\ 5 \mid 193 \\ \underline{15} \\ -- \\ 43 \\ \underline{40} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$193 \div 7 = 27 \text{ remainder } 4$$

$$\begin{array}{r} 27 \\ 7 \mid 193 \\ \underline{14} \\ -- \\ 53 \end{array}$$

49

--

4 ← remainder

$193 \div 11 = 17 \text{ remainder } 6$

17

11 | 193

11

--

83

77

--

6 ← remainder

$193 \div 13 = 14 \text{ remainder } 11$

14

13 | 193

13

--

63

52

--

11 ← remainder

P₄₅ 197

$$197 \div 2 = 98 \text{ remainder } 1$$

$$\begin{array}{r} 98 \\ 2 \mid 197 \\ \underline{18} \\ -- \\ 17 \\ \underline{16} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$197 \div 3 = 65 \text{ remainder } 2$$

$$\begin{array}{r} 65 \\ 3 \mid 197 \\ \underline{18} \\ -- \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$197 \div 5 = 39 \text{ remainder } 2$$

$$\begin{array}{r} 39 \\ 5 \mid 197 \\ \underline{15} \\ -- \\ 47 \\ \underline{45} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$197 \div 7 = 28 \text{ remainder } 1$$

$$\begin{array}{r} 28 \\ 7 \mid 197 \\ \underline{14} \\ -- \\ 57 \end{array}$$

56

--

1 \leftarrow remainder

$197 \div 11 = 17$ remainder 10

17

11 | 197

11

--

87

77

--

10 \leftarrow remainder

$197 \div 13 = 15$ remainder 2

15

13 | 197

13

--

67

65

--

2 \leftarrow remainder

P₄₆ 199

$$199 \div 2 = 99 \text{ remainder } 1$$

$$\begin{array}{r} 99 \\ 2 \mid 199 \\ 18 \\ -- \\ 19 \\ 18 \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$199 \div 3 = 66 \text{ remainder } 1$$

$$\begin{array}{r} 66 \\ 3 \mid 199 \\ 18 \\ -- \\ 19 \\ 18 \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$199 \div 5 = 39 \text{ remainder } 4$$

$$\begin{array}{r} 39 \\ 5 \mid 199 \\ 15 \\ -- \\ 49 \\ 45 \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$199 \div 7 = 28 \text{ remainder } 3$$

$$\begin{array}{r} 28 \\ 7 \mid 199 \\ 14 \\ -- \\ 59 \end{array}$$

56

--

3 ← remainder

$199 \div 11 = 18 \text{ remainder } 1$

18

11 | 199

11

--

89

88

--

1 ← remainder

$199 \div 13 = 15 \text{ remainder } 4$

15

13 | 199

13

--

69

65

--

4 ← remainder

P₄₇ 211

$$211 \div 2 = 105 \text{ remainder } 1$$

$$\begin{array}{r} 105 \\ 2 \overline{) 211} \\ \underline{2} \\ - \\ 1 \\ \underline{0} \\ - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$211 \div 3 = 70 \text{ remainder } 1$$

$$\begin{array}{r} 70 \\ 3 \overline{) 211} \\ \underline{21} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$211 \div 5 = 42 \text{ remainder } 1$$

$$\begin{array}{r} 42 \\ 5 \overline{) 211} \\ \underline{20} \\ - - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$211 \div 7 = 30 \text{ remainder } 1$$

$$\begin{array}{r} 30 \\ 7 \overline{) 211} \end{array}$$

```

21
--
1
0
-
1 ← remainder

```

$211 \div 11 = 19 \text{ remainder } 2$

```

      19
11 | 211
    11
    --
    101
    99
    --
    2 ← remainder

```

$211 \div 13 = 16 \text{ remainder } 3$

```

      16
13 | 211
    13
    --
    81
    78
    --
    3 ← remainder

```

P₄₈ 223

$$223 \div 2 = 111 \text{ remainder } 1$$

$$\begin{array}{r} 111 \\ 2 \mid 223 \\ \underline{2} \\ - \\ 2 \\ \underline{2} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$223 \div 3 = 74 \text{ remainder } 1$$

$$\begin{array}{r} 74 \\ 3 \mid 223 \\ \underline{21} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$223 \div 5 = 44 \text{ remainder } 3$$

$$\begin{array}{r} 44 \\ 5 \mid 223 \\ \underline{20} \\ -- \\ 23 \\ \underline{20} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$223 \div 7 = 31 \text{ remainder } 6$$

$$\begin{array}{r} 31 \\ 7 \mid 223 \end{array}$$

```

21
--
13
7
-
6 ← remainder

```

$223 \div 11 = 20 \text{ remainder } 3$

```

      20
11 | 223
    22
    --
     3
     0
     -
     3 ← remainder

```

$223 \div 13 = 17 \text{ remainder } 2$

```

      17
13 | 223
    13
    --
    93
    91
    --
     2 ← remainder

```

P₄₉ 227

$$227 \div 2 = 113 \text{ remainder } 1$$

$$\begin{array}{r} 113 \\ 2 \overline{) 227} \\ \underline{2} \\ - \\ 2 \\ \underline{2} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$227 \div 3 = 75 \text{ remainder } 2$$

$$\begin{array}{r} 75 \\ 3 \overline{) 227} \\ \underline{21} \\ -- \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$227 \div 5 = 45 \text{ remainder } 2$$

$$\begin{array}{r} 45 \\ 5 \overline{) 227} \\ \underline{20} \\ -- \\ 27 \\ \underline{25} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$227 \div 7 = 32 \text{ remainder } 3$$

$$\begin{array}{r} 32 \\ 7 \overline{) 227} \end{array}$$

```

21
--
17
14
--
3 ← remainder

```

$$227 \div 11 = 20 \text{ remainder } 7$$

```

      20
11 | 227
    22
    --
     7
     0
     -
     7 ← remainder

```

$$227 \div 13 = 17 \text{ remainder } 6$$

```

      17
13 | 227
    13
    --
    97
    91
    --
     6 ← remainder

```


P₅₀ 229

$$229 \div 2 = 114 \text{ remainder } 1$$

$$\begin{array}{r} 114 \\ 2 \overline{) 229} \\ \underline{2} \\ - \\ 2 \\ \underline{2} \\ - \\ 9 \\ \underline{8} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$229 \div 3 = 76 \text{ remainder } 1$$

$$\begin{array}{r} 76 \\ 3 \overline{) 229} \\ \underline{21} \\ -- \\ 19 \\ \underline{18} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$229 \div 5 = 45 \text{ remainder } 4$$

$$\begin{array}{r} 45 \\ 5 \overline{) 229} \\ \underline{20} \\ -- \\ 29 \\ \underline{25} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$229 \div 7 = 32 \text{ remainder } 5$$

$$\begin{array}{r} 32 \\ 7 \overline{) 229} \end{array}$$

21

--

19

14

--

5 \leftarrow remainder

$229 \div 11 = 20$ remainder 9

20

11 | 229

22

--

9

0

-

9 \leftarrow remainder

$229 \div 13 = 17$ remainder 8

17

13 | 229

13

--

99

91

--

8 \leftarrow remainder

P₅₁ 233

$$233 \div 2 = 116 \text{ remainder } 1$$

$$\begin{array}{r} 116 \\ 2 \overline{) 233} \\ \underline{2} \\ - \\ 3 \\ \underline{2} \\ - \\ 13 \\ \underline{12} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$233 \div 3 = 77 \text{ remainder } 2$$

$$\begin{array}{r} 77 \\ 3 \overline{) 233} \\ \underline{21} \\ - \\ 23 \\ \underline{21} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$233 \div 5 = 46 \text{ remainder } 3$$

$$\begin{array}{r} 46 \\ 5 \overline{) 233} \\ \underline{20} \\ - \\ 33 \\ \underline{30} \\ - \\ 3 \leftarrow \text{remainder} \end{array}$$

$$233 \div 7 = 33 \text{ remainder } 2$$

$$\begin{array}{r} 33 \\ 7 \overline{) 233} \end{array}$$

```

21
--
23
21
--
2 ← remainder

```

$$233 \div 11 = 21 \text{ remainder } 2$$

```

      21
11 | 233
    22
    --
    13
    11
    --
    2 ← remainder

```

$$233 \div 13 = 17 \text{ remainder } 12$$

```

      17
13 | 233
    13
    --
    103
    91
    --
    12 ← remainder

```

P₅₂ 239

$$239 \div 2 = 119 \text{ remainder } 1$$

$$\begin{array}{r} 119 \\ 2 \overline{) 239} \\ \underline{2} \\ - \\ 3 \\ \underline{2} \\ - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$239 \div 3 = 79 \text{ remainder } 2$$

$$\begin{array}{r} 79 \\ 3 \overline{) 239} \\ \underline{21} \\ - - \\ 29 \\ \underline{27} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$239 \div 5 = 47 \text{ remainder } 4$$

$$\begin{array}{r} 47 \\ 5 \overline{) 239} \\ \underline{20} \\ - - \\ 39 \\ \underline{35} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$239 \div 7 = 34 \text{ remainder } 1$$

$$\begin{array}{r} 34 \\ 7 \overline{) 239} \end{array}$$

```

21
--
29
28
--
1 ← remainder

```

$239 \div 11 = 21 \text{ remainder } 8$

```

      21
11 | 239
    22
    --
    19
    11
    --
    8 ← remainder

```

$239 \div 13 = 18 \text{ remainder } 5$

```

      18
13 | 239
    13
    --
    109
    104
    ---
    5 ← remainder

```

P₅₃ 241

$$241 \div 2 = 120 \text{ remainder } 1$$

$$\begin{array}{r} 120 \\ 2 \mid 241 \\ \underline{2} \\ - \\ 4 \\ \underline{4} \\ - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$241 \div 3 = 80 \text{ remainder } 1$$

$$\begin{array}{r} 80 \\ 3 \mid 241 \\ \underline{24} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$241 \div 5 = 48 \text{ remainder } 1$$

$$\begin{array}{r} 48 \\ 5 \mid 241 \\ \underline{20} \\ - - \\ 41 \\ \underline{40} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$241 \div 7 = 34 \text{ remainder } 3$$

$$\begin{array}{r} 34 \\ 7 \mid 241 \end{array}$$

```

21
--
31
28
--
3 ← remainder

```

$241 \div 11 = 21 \text{ remainder } 10$

```

      21
11 | 241
    22
    --
    21
    11
    --
    10 ← remainder

```

$241 \div 13 = 18 \text{ remainder } 7$

```

      18
13 | 241
    13
    --
    111
    104
    ---
    7 ← remainder

```


P₅₄ 251

$$251 \div 2 = 125 \text{ remainder } 1$$

$$\begin{array}{r} 125 \\ 2 \overline{) 251} \\ \underline{2} \\ - \\ 5 \\ \underline{4} \\ - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$251 \div 3 = 83 \text{ remainder } 2$$

$$\begin{array}{r} 83 \\ 3 \overline{) 251} \\ \underline{24} \\ - - \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$251 \div 5 = 50 \text{ remainder } 1$$

$$\begin{array}{r} 50 \\ 5 \overline{) 251} \\ \underline{25} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$251 \div 7 = 35 \text{ remainder } 6$$

$$\begin{array}{r} 35 \\ 7 \overline{) 251} \end{array}$$

```

21
--
41
35
--
6 ← remainder

```

$251 \div 11 = 22 \text{ remainder } 9$

```

      22
11 | 251
    22
    --
    31
    22
    --
    9 ← remainder

```

$251 \div 13 = 19 \text{ remainder } 4$

```

      19
13 | 251
    13
    --
    121
    117
    ---
    4 ← remainder

```

P₅₅ 257

$$257 \div 2 = 128 \text{ remainder } 1$$

$$\begin{array}{r} 128 \\ 2 \mid 257 \\ \underline{2} \\ - \\ 5 \\ \underline{4} \\ - \\ 17 \\ \underline{16} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$257 \div 3 = 85 \text{ remainder } 2$$

$$\begin{array}{r} 85 \\ 3 \mid 257 \\ \underline{24} \\ - - \\ 17 \\ \underline{15} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$257 \div 5 = 51 \text{ remainder } 2$$

$$\begin{array}{r} 51 \\ 5 \mid 257 \\ \underline{25} \\ - - \\ 7 \\ \underline{5} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$257 \div 7 = 36 \text{ remainder } 5$$

$$\begin{array}{r} 36 \\ 7 \mid 257 \end{array}$$

```

21
--
47
42
--
5 ← remainder

```

$257 \div 11 = 23 \text{ remainder } 4$

```

      23
11 | 257
    22
    --
     37
     33
     --
      4 ← remainder

```

$257 \div 13 = 19 \text{ remainder } 10$

```

      19
13 | 257
    13
    --
    127
    117
    ---
     10 ← remainder

```

P₅₆ 263

$$263 \div 2 = 131 \text{ remainder } 1$$

$$\begin{array}{r} 131 \\ 2 \overline{) 263} \\ \underline{2} \\ - \\ 6 \\ \underline{6} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$263 \div 3 = 87 \text{ remainder } 2$$

$$\begin{array}{r} 87 \\ 3 \overline{) 263} \\ \underline{24} \\ -- \\ 23 \\ \underline{21} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$263 \div 5 = 52 \text{ remainder } 3$$

$$\begin{array}{r} 52 \\ 5 \overline{) 263} \\ \underline{25} \\ -- \\ 13 \\ \underline{10} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$263 \div 7 = 37 \text{ remainder } 4$$

$$\begin{array}{r} 37 \\ 7 \overline{) 263} \end{array}$$

```

21
--
53
49
--
4 ← remainder

```

$263 \div 11 = 23 \text{ remainder } 10$

```

      23
11 | 263
    22
    --
    43
    33
    --
    10 ← remainder

```

$263 \div 13 = 20 \text{ remainder } 3$

```

      20
13 | 263
    26
    --
     3
     0
     -
     3 ← remainder

```

P₅₇ 269

$$269 \div 2 = 134 \text{ remainder } 1$$

$$\begin{array}{r} 134 \\ 2 \overline{) 269} \\ \underline{2} \\ - \\ 6 \\ \underline{6} \\ - \\ 9 \\ \underline{8} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$269 \div 3 = 89 \text{ remainder } 2$$

$$\begin{array}{r} 89 \\ 3 \overline{) 269} \\ \underline{24} \\ -- \\ 29 \\ \underline{27} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$269 \div 5 = 53 \text{ remainder } 4$$

$$\begin{array}{r} 53 \\ 5 \overline{) 269} \\ \underline{25} \\ -- \\ 19 \\ \underline{15} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$269 \div 7 = 38 \text{ remainder } 3$$

$$\begin{array}{r} 38 \\ 7 \overline{) 269} \end{array}$$

```

21
--
59
56
--
3 ← remainder

```

$$269 \div 11 = 24 \text{ remainder } 5$$

```

      24
11 | 269
    22
    --
    49
    44
    --
    5 ← remainder

```

$$269 \div 13 = 20 \text{ remainder } 9$$

```

      20
13 | 269
    26
    --
     9
     0
     -
     9 ← remainder

```


P₅₈ 271

$$271 \div 2 = 135 \text{ remainder } 1$$

$$\begin{array}{r} 135 \\ 2 \overline{) 271} \\ \underline{2} \\ - \\ 7 \\ \underline{6} \\ - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$271 \div 3 = 90 \text{ remainder } 1$$

$$\begin{array}{r} 90 \\ 3 \overline{) 271} \\ \underline{27} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$271 \div 5 = 54 \text{ remainder } 1$$

$$\begin{array}{r} 54 \\ 5 \overline{) 271} \\ \underline{25} \\ - - \\ 21 \\ \underline{20} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$271 \div 7 = 38 \text{ remainder } 5$$

$$\begin{array}{r} 38 \\ 7 \overline{) 271} \end{array}$$

```

21
--
61
56
--
5 ← remainder

```

$271 \div 11 = 24 \text{ remainder } 7$

```

      24
11 | 271
    22
    --
     51
     44
     --
      7 ← remainder

```

$271 \div 13 = 20 \text{ remainder } 11$

```

      20
13 | 271
    26
    --
     11
     0
     -
     11 ← remainder

```

P₅₉ 277

$$277 \div 2 = 138 \text{ remainder } 1$$

$$\begin{array}{r} 138 \\ 2 \overline{) 277} \\ \underline{2} \\ - \\ 7 \\ \underline{6} \\ - \\ 17 \\ \underline{16} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$277 \div 3 = 92 \text{ remainder } 1$$

$$\begin{array}{r} 92 \\ 3 \overline{) 277} \\ \underline{27} \\ - - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$277 \div 5 = 55 \text{ remainder } 2$$

$$\begin{array}{r} 55 \\ 5 \overline{) 277} \\ \underline{25} \\ - - \\ 27 \\ \underline{25} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$277 \div 7 = 39 \text{ remainder } 4$$

$$\begin{array}{r} 39 \\ 7 \overline{) 277} \end{array}$$

```

21
--
67
63
--
4 ← remainder

```

$$277 \div 11 = 25 \text{ remainder } 2$$

```

      25
11 | 277
    22
    --
    57
    55
    --
    2 ← remainder

```

$$277 \div 13 = 21 \text{ remainder } 4$$

```

      21
13 | 277
    26
    --
    17
    13
    --
    4 ← remainder

```

P₆₀ 281

$$281 \div 2 = 140 \text{ remainder } 1$$

$$\begin{array}{r} 140 \\ 2 \mid 281 \\ \underline{2} \\ - \\ 8 \\ \underline{8} \\ - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$281 \div 3 = 93 \text{ remainder } 2$$

$$\begin{array}{r} 93 \\ 3 \mid 281 \\ \underline{27} \\ -- \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$281 \div 5 = 56 \text{ remainder } 1$$

$$\begin{array}{r} 56 \\ 5 \mid 281 \\ \underline{25} \\ -- \\ 31 \\ \underline{30} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$281 \div 7 = 40 \text{ remainder } 1$$

$$\begin{array}{r} 40 \\ 7 \mid 281 \end{array}$$

```

28
--
1
0
-
1 ← remainder

```

$281 \div 11 = 25 \text{ remainder } 6$

```

      25
11 | 281
    22
    --
    61
    55
    --
    6 ← remainder

```

$281 \div 13 = 21 \text{ remainder } 8$

```

      21
13 | 281
    26
    --
    21
    13
    --
    8 ← remainder

```

P₆₁ 283

$$283 \div 2 = 141 \text{ remainder } 1$$

$$\begin{array}{r} 141 \\ 2 \overline{) 283} \\ \underline{2} \\ - \\ 8 \\ \underline{8} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$283 \div 3 = 94 \text{ remainder } 1$$

$$\begin{array}{r} 94 \\ 3 \overline{) 283} \\ \underline{27} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$283 \div 5 = 56 \text{ remainder } 3$$

$$\begin{array}{r} 56 \\ 5 \overline{) 283} \\ \underline{25} \\ -- \\ 33 \\ \underline{30} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$283 \div 7 = 40 \text{ remainder } 3$$

$$\begin{array}{r} 40 \\ 7 \overline{) 283} \end{array}$$

```

28
--
3
0
-
3 ← remainder

```

$283 \div 11 = 25 \text{ remainder } 8$

```

      25
11 | 283
    22
    --
    63
    55
    --
    8 ← remainder

```

$283 \div 13 = 21 \text{ remainder } 10$

```

      21
13 | 283
    26
    --
    23
    13
    --
    10 ← remainder

```


P₆₂ 293

$$293 \div 2 = 146 \text{ remainder } 1$$

$$\begin{array}{r} 146 \\ 2 \overline{) 293} \\ \underline{2} \\ - \\ 9 \\ \underline{8} \\ - \\ 13 \\ \underline{12} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$293 \div 3 = 97 \text{ remainder } 2$$

$$\begin{array}{r} 97 \\ 3 \overline{) 293} \\ \underline{27} \\ - - \\ 23 \\ \underline{21} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$293 \div 5 = 58 \text{ remainder } 3$$

$$\begin{array}{r} 58 \\ 5 \overline{) 293} \\ \underline{25} \\ - - \\ 43 \\ \underline{40} \\ - - \\ 3 \leftarrow \text{remainder} \end{array}$$

$$293 \div 7 = 41 \text{ remainder } 6$$

$$\begin{array}{r} 41 \\ 7 \overline{) 293} \end{array}$$

```

28
--
13
7
-
6 ← remainder

```

$$293 \div 11 = 26 \text{ remainder } 7$$

```

      26
11 | 293
    22
    --
    73
    66
    --
    7 ← remainder

```

$$293 \div 13 = 22 \text{ remainder } 7$$

```

      22
13 | 293
    26
    --
    33
    26
    --
    7 ← remainder

```

$$293 \div 17 = 17 \text{ remainder } 4$$

```

      17
17 | 293
    17
    --
    123
    119
    ---
    4 ← remainder

```

P₆₃ 307

$$307 \div 2 = 153 \text{ remainder } 1$$

$$\begin{array}{r} 153 \\ 2 \overline{) 307} \\ \underline{2} \\ - \\ 10 \\ \underline{10} \\ -- \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$307 \div 3 = 102 \text{ remainder } 1$$

$$\begin{array}{r} 102 \\ 3 \overline{) 307} \\ \underline{3} \\ - \\ 0 \\ \underline{0} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$307 \div 5 = 61 \text{ remainder } 2$$

$$\begin{array}{r} 61 \\ 5 \overline{) 307} \\ \underline{30} \\ -- \\ 7 \\ \underline{5} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$307 \div 7 = 43 \text{ remainder } 6$$

```

      43
7 | 307
  28
  --
  27
  21
  --
    6 ← remainder

```

$307 \div 11 = 27$ remainder 10

```

      27
11 | 307
   22
   --
   87
   77
   --
    10 ← remainder

```

$307 \div 13 = 23$ remainder 8

```

      23
13 | 307
   26
   --
   47
   39
   --
     8 ← remainder

```

$307 \div 17 = 18$ remainder 1

```

      18
17 | 307
   17
   --
  137
  136
  ---
    1 ← remainder

```

P₆₄ 311

$$311 \div 2 = 155 \text{ remainder } 1$$

$$\begin{array}{r} 155 \\ 2 \overline{) 311} \\ \underline{2} \\ 11 \\ \underline{10} \\ 11 \\ \underline{10} \\ 11 \\ \underline{10} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$311 \div 3 = 103 \text{ remainder } 2$$

$$\begin{array}{r} 103 \\ 3 \overline{) 311} \\ \underline{3} \\ 11 \\ \underline{9} \\ 21 \\ \underline{21} \\ 0 \\ 2 \leftarrow \text{remainder} \end{array}$$

$$311 \div 5 = 62 \text{ remainder } 1$$

$$\begin{array}{r} 62 \\ 5 \overline{) 311} \\ \underline{30} \\ 11 \\ \underline{10} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$311 \div 7 = 44 \text{ remainder } 3$$

$$\begin{array}{r}
 44 \\
 7 \mid 311 \\
 28 \\
 -- \\
 31 \\
 28 \\
 -- \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$311 \div 11 = 28 \text{ remainder } 3$$

$$\begin{array}{r}
 28 \\
 11 \mid 311 \\
 22 \\
 -- \\
 91 \\
 88 \\
 -- \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$311 \div 13 = 23 \text{ remainder } 12$$

$$\begin{array}{r}
 23 \\
 13 \mid 311 \\
 26 \\
 -- \\
 51 \\
 39 \\
 -- \\
 12 \leftarrow \text{remainder}
 \end{array}$$

$$311 \div 17 = 18 \text{ remainder } 5$$

$$\begin{array}{r}
 18 \\
 17 \mid 311 \\
 17 \\
 -- \\
 141 \\
 136 \\
 --- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

P₆₅ 313

$$313 \div 2 = 156 \text{ remainder } 1$$

$$\begin{array}{r} 156 \\ 2 \overline{) 313} \\ \underline{2} \\ - \\ 11 \\ \underline{10} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$313 \div 3 = 104 \text{ remainder } 1$$

$$\begin{array}{r} 104 \\ 3 \overline{) 313} \\ \underline{3} \\ - \\ 1 \\ \underline{0} \\ - \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$313 \div 5 = 62 \text{ remainder } 3$$

$$\begin{array}{r} 62 \\ 5 \overline{) 313} \\ \underline{30} \\ -- \\ 13 \\ \underline{10} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$313 \div 7 = 44 \text{ remainder } 5$$

$$\begin{array}{r}
 44 \\
 7 \mid 313 \\
 28 \\
 -- \\
 33 \\
 28 \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$313 \div 11 = 28 \text{ remainder } 5$$

$$\begin{array}{r}
 28 \\
 11 \mid 313 \\
 22 \\
 -- \\
 93 \\
 88 \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$313 \div 13 = 24 \text{ remainder } 1$$

$$\begin{array}{r}
 24 \\
 13 \mid 313 \\
 26 \\
 -- \\
 53 \\
 52 \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$313 \div 17 = 18 \text{ remainder } 7$$

$$\begin{array}{r}
 18 \\
 17 \mid 313 \\
 17 \\
 -- \\
 143 \\
 136 \\
 --- \\
 7 \leftarrow \text{remainder}
 \end{array}$$

P₆₆ 317

$$317 \div 2 = 158 \text{ remainder } 1$$

$$\begin{array}{r} 158 \\ 2 \overline{) 317} \\ \underline{2} \\ - \\ 11 \\ \underline{10} \\ -- \\ 17 \\ \underline{16} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$317 \div 3 = 105 \text{ remainder } 2$$

$$\begin{array}{r} 105 \\ 3 \overline{) 317} \\ \underline{3} \\ - \\ 1 \\ \underline{0} \\ - \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$317 \div 5 = 63 \text{ remainder } 2$$

$$\begin{array}{r} 63 \\ 5 \overline{) 317} \\ \underline{30} \\ -- \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$317 \div 7 = 45 \text{ remainder } 2$$

```

      45
7 | 317
   28
   --
   37
   35
   --
   2 ← remainder

```

$317 \div 11 = 28$ remainder 9

```

      28
11 | 317
   22
   --
   97
   88
   --
   9 ← remainder

```

$317 \div 13 = 24$ remainder 5

```

      24
13 | 317
   26
   --
   57
   52
   --
   5 ← remainder

```

$317 \div 17 = 18$ remainder 11

```

      18
17 | 317
   17
   --
  147
  136
  ---
  11 ← remainder

```

P₆₇ 331

$$331 \div 2 = 165 \text{ remainder } 1$$

$$\begin{array}{r} 165 \\ 2 \overline{) 331} \\ \underline{2} \\ - \\ 13 \\ \underline{12} \\ - - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$331 \div 3 = 110 \text{ remainder } 1$$

$$\begin{array}{r} 110 \\ 3 \overline{) 331} \\ \underline{3} \\ - \\ 3 \\ \underline{3} \\ - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$331 \div 5 = 66 \text{ remainder } 1$$

$$\begin{array}{r} 66 \\ 5 \overline{) 331} \\ \underline{30} \\ - - \\ 31 \\ \underline{30} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$331 \div 7 = 47 \text{ remainder } 2$$

```

      47
7 | 331
  28
  --
  51
  49
  --
  2 ← remainder

```

$331 \div 11 = 30 \text{ remainder } 1$

```

      30
11 | 331
   33
   --
    1
    0
    -
    1 ← remainder

```

$331 \div 13 = 25 \text{ remainder } 6$

```

      25
13 | 331
   26
   --
   71
   65
   --
    6 ← remainder

```

$331 \div 17 = 19 \text{ remainder } 8$

```

      19
17 | 331
   17
   --
  161
  153
  ---
    8 ← remainder

```

P₆₈ 337

$$337 \div 2 = 168 \text{ remainder } 1$$

$$\begin{array}{r} 168 \\ 2 \overline{) 337} \\ \underline{2} \\ - \\ 13 \\ \underline{12} \\ -- \\ 17 \\ \underline{16} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$337 \div 3 = 112 \text{ remainder } 1$$

$$\begin{array}{r} 112 \\ 3 \overline{) 337} \\ \underline{3} \\ - \\ 3 \\ \underline{3} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$337 \div 5 = 67 \text{ remainder } 2$$

$$\begin{array}{r} 67 \\ 5 \overline{) 337} \\ \underline{30} \\ -- \\ 37 \\ \underline{35} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$337 \div 7 = 48 \text{ remainder } 1$$

$$\begin{array}{r}
 48 \\
 7 \mid 337 \\
 \underline{28} \\
 -- \\
 57 \\
 \underline{56} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$337 \div 11 = 30 \text{ remainder } 7$$

$$\begin{array}{r}
 30 \\
 11 \mid 337 \\
 \underline{33} \\
 -- \\
 7 \\
 \underline{0} \\
 - \\
 7 \leftarrow \text{remainder}
 \end{array}$$

$$337 \div 13 = 25 \text{ remainder } 12$$

$$\begin{array}{r}
 25 \\
 13 \mid 337 \\
 \underline{26} \\
 -- \\
 77 \\
 \underline{65} \\
 -- \\
 12 \leftarrow \text{remainder}
 \end{array}$$

$$337 \div 17 = 19 \text{ remainder } 14$$

$$\begin{array}{r}
 19 \\
 17 \mid 337 \\
 \underline{17} \\
 -- \\
 167 \\
 \underline{153} \\
 --- \\
 14 \leftarrow \text{remainder}
 \end{array}$$

P₆₉ 347

$$347 \div 2 = 173 \text{ remainder } 1$$

$$\begin{array}{r} 173 \\ 2 \overline{) 347} \\ \underline{2} \\ - \\ 14 \\ \underline{14} \\ -- \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$347 \div 3 = 115 \text{ remainder } 2$$

$$\begin{array}{r} 115 \\ 3 \overline{) 347} \\ \underline{3} \\ - \\ 4 \\ \underline{3} \\ - \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$347 \div 5 = 69 \text{ remainder } 2$$

$$\begin{array}{r} 69 \\ 5 \overline{) 347} \\ \underline{30} \\ -- \\ 47 \\ \underline{45} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$347 \div 7 = 49 \text{ remainder } 4$$

$$\begin{array}{r}
 49 \\
 7 \mid 347 \\
 28 \\
 -- \\
 67 \\
 63 \\
 -- \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$347 \div 11 = 31 \text{ remainder } 6$$

$$\begin{array}{r}
 31 \\
 11 \mid 347 \\
 33 \\
 -- \\
 17 \\
 11 \\
 -- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$347 \div 13 = 26 \text{ remainder } 9$$

$$\begin{array}{r}
 26 \\
 13 \mid 347 \\
 26 \\
 -- \\
 87 \\
 78 \\
 -- \\
 9 \leftarrow \text{remainder}
 \end{array}$$

$$347 \div 17 = 20 \text{ remainder } 7$$

$$\begin{array}{r}
 20 \\
 17 \mid 347 \\
 34 \\
 -- \\
 7 \\
 0 \\
 - \\
 7 \leftarrow \text{remainder}
 \end{array}$$

P₇₀ 349

$$349 \div 2 = 174 \text{ remainder } 1$$

$$\begin{array}{r} 174 \\ 2 \overline{) 349} \\ \underline{2} \\ - \\ 14 \\ \underline{14} \\ - - \\ 9 \\ \underline{8} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$349 \div 3 = 116 \text{ remainder } 1$$

$$\begin{array}{r} 116 \\ 3 \overline{) 349} \\ \underline{3} \\ - \\ 4 \\ \underline{3} \\ - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$349 \div 5 = 69 \text{ remainder } 4$$

$$\begin{array}{r} 69 \\ 5 \overline{) 349} \\ \underline{30} \\ - - \\ 49 \\ \underline{45} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$349 \div 7 = 49 \text{ remainder } 6$$

$$\begin{array}{r}
 49 \\
 7 \mid 349 \\
 \underline{28} \\
 69 \\
 \underline{63} \\
 6 \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$349 \div 11 = 31 \text{ remainder } 8$$

$$\begin{array}{r}
 31 \\
 11 \mid 349 \\
 \underline{33} \\
 19 \\
 \underline{11} \\
 8 \\
 8 \leftarrow \text{remainder}
 \end{array}$$

$$349 \div 13 = 26 \text{ remainder } 11$$

$$\begin{array}{r}
 26 \\
 13 \mid 349 \\
 \underline{26} \\
 89 \\
 \underline{78} \\
 11 \\
 11 \leftarrow \text{remainder}
 \end{array}$$

$$349 \div 17 = 20 \text{ remainder } 9$$

$$\begin{array}{r}
 20 \\
 17 \mid 349 \\
 \underline{34} \\
 9 \\
 \underline{0} \\
 9 \\
 9 \leftarrow \text{remainder}
 \end{array}$$

P₇₁ 353

$$353 \div 2 = 176 \text{ remainder } 1$$

$$\begin{array}{r} 176 \\ 2 \overline{) 353} \\ \underline{2} \\ - \\ 15 \\ \underline{14} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$353 \div 3 = 117 \text{ remainder } 2$$

$$\begin{array}{r} 117 \\ 3 \overline{) 353} \\ \underline{3} \\ - \\ 5 \\ \underline{3} \\ - \\ 23 \\ \underline{21} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$353 \div 5 = 70 \text{ remainder } 3$$

$$\begin{array}{r} 70 \\ 5 \overline{) 353} \\ \underline{35} \\ -- \\ 3 \\ \underline{0} \\ - \\ 3 \leftarrow \text{remainder} \end{array}$$

$$353 \div 7 = 50 \text{ remainder } 3$$

$$\begin{array}{r}
 50 \\
 7 \mid 353 \\
 \underline{35} \\
 -- \\
 3 \\
 0 \\
 - \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$353 \div 11 = 32 \text{ remainder } 1$$

$$\begin{array}{r}
 32 \\
 11 \mid 353 \\
 \underline{33} \\
 -- \\
 23 \\
 \underline{22} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$353 \div 13 = 27 \text{ remainder } 2$$

$$\begin{array}{r}
 27 \\
 13 \mid 353 \\
 \underline{26} \\
 -- \\
 93 \\
 \underline{91} \\
 -- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$353 \div 17 = 20 \text{ remainder } 13$$

$$\begin{array}{r}
 20 \\
 17 \mid 353 \\
 \underline{34} \\
 -- \\
 13 \\
 0 \\
 - \\
 13 \leftarrow \text{remainder}
 \end{array}$$

P₇₂ 359

$$359 \div 2 = 179 \text{ remainder } 1$$

$$\begin{array}{r} 179 \\ 2 \overline{) 359} \\ \underline{2} \\ - \\ 15 \\ \underline{14} \\ - - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$359 \div 3 = 119 \text{ remainder } 2$$

$$\begin{array}{r} 119 \\ 3 \overline{) 359} \\ \underline{3} \\ - \\ 5 \\ \underline{3} \\ - \\ 29 \\ \underline{27} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$359 \div 5 = 71 \text{ remainder } 4$$

$$\begin{array}{r} 71 \\ 5 \overline{) 359} \\ \underline{35} \\ - - \\ 9 \\ \underline{5} \\ - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$359 \div 7 = 51 \text{ remainder } 2$$

$$\begin{array}{r}
 51 \\
 7 \mid 359 \\
 \underline{35} \\
 -- \\
 9 \\
 \underline{7} \\
 - \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$359 \div 11 = 32 \text{ remainder } 7$$

$$\begin{array}{r}
 32 \\
 11 \mid 359 \\
 \underline{33} \\
 -- \\
 29 \\
 \underline{22} \\
 -- \\
 7 \leftarrow \text{remainder}
 \end{array}$$

$$359 \div 13 = 27 \text{ remainder } 8$$

$$\begin{array}{r}
 27 \\
 13 \mid 359 \\
 \underline{26} \\
 -- \\
 99 \\
 \underline{91} \\
 -- \\
 8 \leftarrow \text{remainder}
 \end{array}$$

$$359 \div 17 = 21 \text{ remainder } 2$$

$$\begin{array}{r}
 21 \\
 17 \mid 359 \\
 \underline{34} \\
 -- \\
 19 \\
 \underline{17} \\
 -- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

P₇₃ 367

$$367 \div 2 = 183 \text{ remainder } 1$$

$$\begin{array}{r} 183 \\ 2 \overline{) 367} \\ \underline{2} \\ - \\ 16 \\ \underline{16} \\ -- \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$367 \div 3 = 122 \text{ remainder } 1$$

$$\begin{array}{r} 122 \\ 3 \overline{) 367} \\ \underline{3} \\ - \\ 6 \\ \underline{6} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$367 \div 5 = 73 \text{ remainder } 2$$

$$\begin{array}{r} 73 \\ 5 \overline{) 367} \\ \underline{35} \\ -- \\ 17 \\ \underline{15} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$367 \div 7 = 52 \text{ remainder } 3$$

$$\begin{array}{r}
 52 \\
 7 \mid 367 \\
 \underline{35} \\
 -- \\
 17 \\
 \underline{14} \\
 -- \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$367 \div 11 = 33 \text{ remainder } 4$$

$$\begin{array}{r}
 33 \\
 11 \mid 367 \\
 \underline{33} \\
 -- \\
 37 \\
 \underline{33} \\
 -- \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$367 \div 13 = 28 \text{ remainder } 3$$

$$\begin{array}{r}
 28 \\
 13 \mid 367 \\
 \underline{26} \\
 -- \\
 107 \\
 \underline{104} \\
 --- \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$367 \div 17 = 21 \text{ remainder } 10$$

$$\begin{array}{r}
 21 \\
 17 \mid 367 \\
 \underline{34} \\
 -- \\
 27 \\
 \underline{17} \\
 -- \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$367 \div 19 = 19 \text{ remainder } 6$$

| | | |
|----|----|---------------|
| | 19 | |
| 19 | | 367 |
| | | 19 |
| | | -- |
| | | 177 |
| | | 171 |
| | | --- |
| | | 6 ← remainder |

P₇₄ 373

$$373 \div 2 = 186 \text{ remainder } 1$$

$$\begin{array}{r} 186 \\ 2 \overline{) 373} \\ \underline{2} \\ - \\ 17 \\ \underline{16} \\ -- \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$373 \div 3 = 124 \text{ remainder } 1$$

$$\begin{array}{r} 124 \\ 3 \overline{) 373} \\ \underline{3} \\ - \\ 7 \\ \underline{6} \\ - \\ 13 \\ \underline{12} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$373 \div 5 = 74 \text{ remainder } 3$$

$$\begin{array}{r} 74 \\ 5 \overline{) 373} \\ \underline{35} \\ -- \\ 23 \\ \underline{20} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$373 \div 7 = 53 \text{ remainder } 2$$

$$\begin{array}{r}
 53 \\
 7 \mid 373 \\
 \underline{35} \\
 23 \\
 \underline{21} \\
 2 \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$373 \div 11 = 33 \text{ remainder } 10$$

$$\begin{array}{r}
 33 \\
 11 \mid 373 \\
 \underline{33} \\
 43 \\
 \underline{33} \\
 10 \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$373 \div 13 = 28 \text{ remainder } 9$$

$$\begin{array}{r}
 28 \\
 13 \mid 373 \\
 \underline{26} \\
 113 \\
 \underline{104} \\
 9 \\
 9 \leftarrow \text{remainder}
 \end{array}$$

$$373 \div 17 = 21 \text{ remainder } 16$$

$$\begin{array}{r}
 21 \\
 17 \mid 373 \\
 \underline{34} \\
 33 \\
 \underline{17} \\
 16 \\
 16 \leftarrow \text{remainder}
 \end{array}$$

$$373 \div 19 = 19 \text{ remainder } 12$$

| | | |
|----|----|----------------|
| | 19 | |
| 19 | | 373 |
| | | 19 |
| | | -- |
| | | 183 |
| | | 171 |
| | | --- |
| | | 12 ← remainder |

P₇₅ 379

$$379 \div 2 = 189 \text{ remainder } 1$$

$$\begin{array}{r} 189 \\ 2 \overline{) 379} \\ \underline{2} \\ - \\ 17 \\ \underline{16} \\ - - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$379 \div 3 = 126 \text{ remainder } 1$$

$$\begin{array}{r} 126 \\ 3 \overline{) 379} \\ \underline{3} \\ - \\ 7 \\ \underline{6} \\ - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$379 \div 5 = 75 \text{ remainder } 4$$

$$\begin{array}{r} 75 \\ 5 \overline{) 379} \\ \underline{35} \\ - - \\ 29 \\ \underline{25} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$379 \div 7 = 54 \text{ remainder } 1$$

$$\begin{array}{r}
 54 \\
 7 \mid 379 \\
 \underline{35} \\
 -- \\
 29 \\
 \underline{28} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$379 \div 11 = 34 \text{ remainder } 5$$

$$\begin{array}{r}
 34 \\
 11 \mid 379 \\
 \underline{33} \\
 -- \\
 49 \\
 \underline{44} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$379 \div 13 = 29 \text{ remainder } 2$$

$$\begin{array}{r}
 29 \\
 13 \mid 379 \\
 \underline{26} \\
 -- \\
 119 \\
 \underline{117} \\
 --- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$379 \div 17 = 22 \text{ remainder } 5$$

$$\begin{array}{r}
 22 \\
 17 \mid 379 \\
 \underline{34} \\
 -- \\
 39 \\
 \underline{34} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$379 \div 19 = 19 \text{ remainder } 18$$

| | | |
|----|----|----------------|
| | 19 | |
| 19 | | 379 |
| | | 19 |
| | | -- |
| | | 189 |
| | | 171 |
| | | --- |
| | | 18 ← remainder |

P₇₆ 383

$$383 \div 2 = 191 \text{ remainder } 1$$

$$\begin{array}{r} 191 \\ 2 \overline{) 383} \\ \underline{2} \\ - \\ 18 \\ \underline{18} \\ -- \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$383 \div 3 = 127 \text{ remainder } 2$$

$$\begin{array}{r} 127 \\ 3 \overline{) 383} \\ \underline{3} \\ - \\ 8 \\ \underline{6} \\ - \\ 23 \\ \underline{21} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$383 \div 5 = 76 \text{ remainder } 3$$

$$\begin{array}{r} 76 \\ 5 \overline{) 383} \\ \underline{35} \\ -- \\ 33 \\ \underline{30} \\ -- \\ 3 \leftarrow \text{remainder} \end{array}$$

$$383 \div 7 = 54 \text{ remainder } 5$$

$$\begin{array}{r}
 54 \\
 7 \mid 383 \\
 \underline{35} \\
 -- \\
 33 \\
 \underline{28} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$383 \div 11 = 34 \text{ remainder } 9$$

$$\begin{array}{r}
 34 \\
 11 \mid 383 \\
 \underline{33} \\
 -- \\
 53 \\
 \underline{44} \\
 -- \\
 9 \leftarrow \text{remainder}
 \end{array}$$

$$383 \div 13 = 29 \text{ remainder } 6$$

$$\begin{array}{r}
 29 \\
 13 \mid 383 \\
 \underline{26} \\
 -- \\
 123 \\
 \underline{117} \\
 --- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$383 \div 17 = 22 \text{ remainder } 9$$

$$\begin{array}{r}
 22 \\
 17 \mid 383 \\
 \underline{34} \\
 -- \\
 43 \\
 \underline{34} \\
 -- \\
 9 \leftarrow \text{remainder}
 \end{array}$$

$$383 \div 19 = 20 \text{ remainder } 3$$

| | | |
|----|----|---------------|
| | 20 | |
| 19 | | 383 |
| | | 38 |
| | | -- |
| | | 3 |
| | | 0 |
| | | - |
| | | 3 ← remainder |

P₇₇ 389

$$389 \div 2 = 194 \text{ remainder } 1$$

$$\begin{array}{r} 194 \\ 2 \overline{) 389} \\ \underline{2} \\ - \\ 18 \\ \underline{18} \\ -- \\ 9 \\ \underline{8} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$389 \div 3 = 129 \text{ remainder } 2$$

$$\begin{array}{r} 129 \\ 3 \overline{) 389} \\ \underline{3} \\ - \\ 8 \\ \underline{6} \\ - \\ 29 \\ \underline{27} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$389 \div 5 = 77 \text{ remainder } 4$$

$$\begin{array}{r} 77 \\ 5 \overline{) 389} \\ \underline{35} \\ -- \\ 39 \\ \underline{35} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$389 \div 7 = 55 \text{ remainder } 4$$

$$\begin{array}{r}
 55 \\
 7 \mid 389 \\
 \underline{35} \\
 -- \\
 39 \\
 \underline{35} \\
 -- \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$389 \div 11 = 35 \text{ remainder } 4$$

$$\begin{array}{r}
 35 \\
 11 \mid 389 \\
 \underline{33} \\
 -- \\
 59 \\
 \underline{55} \\
 -- \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$389 \div 13 = 29 \text{ remainder } 12$$

$$\begin{array}{r}
 29 \\
 13 \mid 389 \\
 \underline{26} \\
 -- \\
 129 \\
 \underline{117} \\
 --- \\
 12 \leftarrow \text{remainder}
 \end{array}$$

$$389 \div 17 = 22 \text{ remainder } 15$$

$$\begin{array}{r}
 22 \\
 17 \mid 389 \\
 \underline{34} \\
 -- \\
 49 \\
 \underline{34} \\
 -- \\
 15 \leftarrow \text{remainder}
 \end{array}$$

$$389 \div 19 = 20 \text{ remainder } 9$$

| | | |
|----|----|---------------|
| | 20 | |
| 19 | | 389 |
| | | 38 |
| | | -- |
| | | 9 |
| | | 0 |
| | | - |
| | | 9 ← remainder |

P₇₈ 397

$$397 \div 2 = 198 \text{ remainder } 1$$

$$\begin{array}{r} 198 \\ 2 \overline{) 397} \\ \underline{2} \\ - \\ 19 \\ \underline{18} \\ -- \\ 17 \\ \underline{16} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$397 \div 3 = 132 \text{ remainder } 1$$

$$\begin{array}{r} 132 \\ 3 \overline{) 397} \\ \underline{3} \\ - \\ 9 \\ \underline{9} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$397 \div 5 = 79 \text{ remainder } 2$$

$$\begin{array}{r} 79 \\ 5 \overline{) 397} \\ \underline{35} \\ -- \\ 47 \\ \underline{45} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$397 \div 7 = 56 \text{ remainder } 5$$

$$\begin{array}{r}
 56 \\
 7 \mid 397 \\
 \underline{35} \\
 -- \\
 47 \\
 \underline{42} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$397 \div 11 = 36 \text{ remainder } 1$$

$$\begin{array}{r}
 36 \\
 11 \mid 397 \\
 \underline{33} \\
 -- \\
 67 \\
 \underline{66} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$397 \div 13 = 30 \text{ remainder } 7$$

$$\begin{array}{r}
 30 \\
 13 \mid 397 \\
 \underline{39} \\
 -- \\
 7 \\
 \underline{0} \\
 - \\
 7 \leftarrow \text{remainder}
 \end{array}$$

$$397 \div 17 = 23 \text{ remainder } 6$$

$$\begin{array}{r}
 23 \\
 17 \mid 397 \\
 \underline{34} \\
 -- \\
 57 \\
 \underline{51} \\
 -- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$397 \div 19 = 20 \text{ remainder } 17$$

| | | |
|----|----|----------------|
| | 20 | |
| 19 | | 397 |
| | | 38 |
| | | -- |
| | | 17 |
| | | 0 |
| | | - |
| | | 17 ← remainder |

P₇₉ 401

$$401 \div 2 = 200 \text{ remainder } 1$$

$$\begin{array}{r} 200 \\ 2 \mid 401 \\ \underline{4} \\ 0 \\ \underline{0} \\ 0 \\ \underline{0} \\ 1 \\ \underline{0} \\ 1 \\ \underline{1} \\ 0 \end{array}$$

1 ← remainder

$$401 \div 3 = 133 \text{ remainder } 2$$

$$\begin{array}{r} 133 \\ 3 \mid 401 \\ \underline{3} \\ 10 \\ \underline{9} \\ 11 \\ \underline{9} \\ 2 \\ \underline{2} \\ 0 \end{array}$$

2 ← remainder

$$401 \div 5 = 80 \text{ remainder } 1$$

$$\begin{array}{r} 80 \\ 5 \mid 401 \\ \underline{40} \\ 1 \\ \underline{0} \\ 1 \\ \underline{1} \\ 0 \end{array}$$

1 ← remainder

$$401 \div 7 = 57 \text{ remainder } 2$$

$$\begin{array}{r}
 57 \\
 7 \mid 401 \\
 35 \\
 \text{--} \\
 51 \\
 49 \\
 \text{--} \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$401 \div 11 = 36 \text{ remainder } 5$$

$$\begin{array}{r}
 36 \\
 11 \mid 401 \\
 33 \\
 \text{--} \\
 71 \\
 66 \\
 \text{--} \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$401 \div 13 = 30 \text{ remainder } 11$$

$$\begin{array}{r}
 30 \\
 13 \mid 401 \\
 39 \\
 \text{--} \\
 11 \\
 0 \\
 \text{--} \\
 11 \leftarrow \text{remainder}
 \end{array}$$

$$401 \div 17 = 23 \text{ remainder } 10$$

$$\begin{array}{r}
 23 \\
 17 \mid 401 \\
 34 \\
 \text{--} \\
 61 \\
 51 \\
 \text{--} \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$401 \div 19 = 21 \text{ remainder } 2$$

| | | |
|----|----|---------------|
| | 21 | |
| 19 | | 401 |
| | | 38 |
| | | -- |
| | | 21 |
| | | 19 |
| | | -- |
| | | 2 ← remainder |

P₈₀ 409

$$409 \div 2 = 204 \text{ remainder } 1$$

$$\begin{array}{r} 204 \\ 2 \mid 409 \\ \underline{4} \\ - \\ 0 \\ 0 \\ - \\ 9 \\ 8 \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$409 \div 3 = 136 \text{ remainder } 1$$

$$\begin{array}{r} 136 \\ 3 \mid 409 \\ \underline{3} \\ - \\ 10 \\ 9 \\ - \\ 19 \\ 18 \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$409 \div 5 = 81 \text{ remainder } 4$$

$$\begin{array}{r} 81 \\ 5 \mid 409 \\ \underline{40} \\ - - \\ 9 \\ 5 \\ - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$409 \div 7 = 58 \text{ remainder } 3$$

$$\begin{array}{r}
 58 \\
 7 \mid 409 \\
 35 \\
 \text{--} \\
 59 \\
 56 \\
 \text{--} \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$409 \div 11 = 37 \text{ remainder } 2$$

$$\begin{array}{r}
 37 \\
 11 \mid 409 \\
 33 \\
 \text{--} \\
 79 \\
 77 \\
 \text{--} \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$409 \div 13 = 31 \text{ remainder } 6$$

$$\begin{array}{r}
 31 \\
 13 \mid 409 \\
 39 \\
 \text{--} \\
 19 \\
 13 \\
 \text{--} \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$409 \div 17 = 24 \text{ remainder } 1$$

$$\begin{array}{r}
 24 \\
 17 \mid 409 \\
 34 \\
 \text{--} \\
 69 \\
 68 \\
 \text{--} \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$409 \div 19 = 21 \text{ remainder } 10$$

| | | |
|----|----|----------------|
| | 21 | |
| 19 | | 409 |
| | | 38 |
| | | -- |
| | | 29 |
| | | 19 |
| | | -- |
| | | 10 ← remainder |

P₈₁ 419

$$419 \div 2 = 209 \text{ remainder } 1$$

$$\begin{array}{r} 209 \\ 2 \overline{) 419} \\ \underline{4} \\ - \\ 1 \\ \underline{0} \\ - \\ 19 \\ \underline{18} \\ -- \\ 1 \leftarrow \text{remainder} \end{array}$$

$$419 \div 3 = 139 \text{ remainder } 2$$

$$\begin{array}{r} 139 \\ 3 \overline{) 419} \\ \underline{3} \\ - \\ 11 \\ \underline{9} \\ - \\ 29 \\ \underline{27} \\ -- \\ 2 \leftarrow \text{remainder} \end{array}$$

$$419 \div 5 = 83 \text{ remainder } 4$$

$$\begin{array}{r} 83 \\ 5 \overline{) 419} \\ \underline{40} \\ -- \\ 19 \\ \underline{15} \\ -- \\ 4 \leftarrow \text{remainder} \end{array}$$

$$419 \div 7 = 59 \text{ remainder } 6$$

$$\begin{array}{r}
 59 \\
 7 \mid 419 \\
 35 \\
 -- \\
 69 \\
 63 \\
 -- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$419 \div 11 = 38 \text{ remainder } 1$$

$$\begin{array}{r}
 38 \\
 11 \mid 419 \\
 33 \\
 -- \\
 89 \\
 88 \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$419 \div 13 = 32 \text{ remainder } 3$$

$$\begin{array}{r}
 32 \\
 13 \mid 419 \\
 39 \\
 -- \\
 29 \\
 26 \\
 -- \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$419 \div 17 = 24 \text{ remainder } 11$$

$$\begin{array}{r}
 24 \\
 17 \mid 419 \\
 34 \\
 -- \\
 79 \\
 68 \\
 -- \\
 11 \leftarrow \text{remainder}
 \end{array}$$

$$419 \div 19 = 22 \text{ remainder } 1$$


```

      22
19 | 419
    38
    --
    39
    38
    --
    1 ← remainder

```

P₈₂ 421

$$421 \div 2 = 210 \text{ remainder } 1$$

$$\begin{array}{r} 210 \\ 2 \mid 421 \\ \underline{4} \\ - \\ 2 \\ \underline{2} \\ - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$421 \div 3 = 140 \text{ remainder } 1$$

$$\begin{array}{r} 140 \\ 3 \mid 421 \\ \underline{3} \\ - \\ 12 \\ \underline{12} \\ - - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$421 \div 5 = 84 \text{ remainder } 1$$

$$\begin{array}{r} 84 \\ 5 \mid 421 \\ \underline{40} \\ - - \\ 21 \\ \underline{20} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$421 \div 7 = 60 \text{ remainder } 1$$

$$\begin{array}{r}
 60 \\
 7 \mid 421 \\
 \underline{42} \\
 -- \\
 1 \\
 0 \\
 - \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$421 \div 11 = 38 \text{ remainder } 3$$

$$\begin{array}{r}
 38 \\
 11 \mid 421 \\
 \underline{33} \\
 -- \\
 91 \\
 \underline{88} \\
 -- \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$421 \div 13 = 32 \text{ remainder } 5$$

$$\begin{array}{r}
 32 \\
 13 \mid 421 \\
 \underline{39} \\
 -- \\
 31 \\
 \underline{26} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$421 \div 17 = 24 \text{ remainder } 13$$

$$\begin{array}{r}
 24 \\
 17 \mid 421 \\
 \underline{34} \\
 -- \\
 81 \\
 \underline{68} \\
 -- \\
 13 \leftarrow \text{remainder}
 \end{array}$$

$$421 \div 19 = 22 \text{ remainder } 3$$

| | | |
|----|----|---------------|
| | 22 | |
| 19 | | 421 |
| | | 38 |
| | | -- |
| | | 41 |
| | | 38 |
| | | -- |
| | | 3 ← remainder |

P₈₃ 431

$$431 \div 2 = 215 \text{ remainder } 1$$

$$\begin{array}{r} 215 \\ 2 \overline{) 431} \\ \underline{4} \\ - \\ 3 \\ \underline{2} \\ - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$431 \div 3 = 143 \text{ remainder } 2$$

$$\begin{array}{r} 143 \\ 3 \overline{) 431} \\ \underline{3} \\ - \\ 13 \\ \underline{12} \\ - - \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$431 \div 5 = 86 \text{ remainder } 1$$

$$\begin{array}{r} 86 \\ 5 \overline{) 431} \\ \underline{40} \\ - - \\ 31 \\ \underline{30} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$431 \div 7 = 61 \text{ remainder } 4$$

$$\begin{array}{r}
 61 \\
 7 \mid 431 \\
 \underline{42} \\
 11 \\
 \underline{7} \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$431 \div 11 = 39 \text{ remainder } 2$$

$$\begin{array}{r}
 39 \\
 11 \mid 431 \\
 \underline{33} \\
 101 \\
 \underline{99} \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$431 \div 13 = 33 \text{ remainder } 2$$

$$\begin{array}{r}
 33 \\
 13 \mid 431 \\
 \underline{39} \\
 41 \\
 \underline{39} \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$431 \div 17 = 25 \text{ remainder } 6$$

$$\begin{array}{r}
 25 \\
 17 \mid 431 \\
 \underline{34} \\
 91 \\
 \underline{85} \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$431 \div 19 = 22 \text{ remainder } 13$$

| | | |
|----|----|----------------|
| | 22 | |
| 19 | | 431 |
| | | 38 |
| | | -- |
| | | 51 |
| | | 38 |
| | | -- |
| | | 13 ← remainder |

P₈₄ 433

$$433 \div 2 = 216 \text{ remainder } 1$$

$$\begin{array}{r} 216 \\ 2 \mid 433 \\ \underline{4} \\ - \\ 3 \\ \underline{2} \\ - \\ 13 \\ \underline{12} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$433 \div 3 = 144 \text{ remainder } 1$$

$$\begin{array}{r} 144 \\ 3 \mid 433 \\ \underline{3} \\ - \\ 13 \\ \underline{12} \\ - - \\ 13 \\ \underline{12} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$433 \div 5 = 86 \text{ remainder } 3$$

$$\begin{array}{r} 86 \\ 5 \mid 433 \\ \underline{40} \\ - - \\ 33 \\ \underline{30} \\ - - \\ 3 \leftarrow \text{remainder} \end{array}$$

$$433 \div 7 = 61 \text{ remainder } 6$$

$$\begin{array}{r}
 61 \\
 7 \mid 433 \\
 \underline{42} \\
 13 \\
 \underline{7} \\
 6 \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$433 \div 11 = 39 \text{ remainder } 4$$

$$\begin{array}{r}
 39 \\
 11 \mid 433 \\
 \underline{33} \\
 103 \\
 \underline{99} \\
 4 \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$433 \div 13 = 33 \text{ remainder } 4$$

$$\begin{array}{r}
 33 \\
 13 \mid 433 \\
 \underline{39} \\
 43 \\
 \underline{39} \\
 4 \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$433 \div 17 = 25 \text{ remainder } 8$$

$$\begin{array}{r}
 25 \\
 17 \mid 433 \\
 \underline{34} \\
 93 \\
 \underline{85} \\
 8 \\
 8 \leftarrow \text{remainder}
 \end{array}$$

$$433 \div 19 = 22 \text{ remainder } 15$$

| | | |
|----|----|----------------|
| | 22 | |
| 19 | | 433 |
| | | 38 |
| | | -- |
| | | 53 |
| | | 38 |
| | | -- |
| | | 15 ← remainder |

P₈₅ 439

$$439 \div 2 = 219 \text{ remainder } 1$$

$$\begin{array}{r} 219 \\ 2 \overline{) 439} \\ \underline{4} \\ - \\ 3 \\ \underline{2} \\ - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$439 \div 3 = 146 \text{ remainder } 1$$

$$\begin{array}{r} 146 \\ 3 \overline{) 439} \\ \underline{3} \\ - \\ 13 \\ \underline{12} \\ - - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$439 \div 5 = 87 \text{ remainder } 4$$

$$\begin{array}{r} 87 \\ 5 \overline{) 439} \\ \underline{40} \\ - - \\ 39 \\ \underline{35} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$439 \div 7 = 62 \text{ remainder } 5$$

$$\begin{array}{r}
 62 \\
 7 \mid 439 \\
 \underline{42} \\
 -- \\
 19 \\
 \underline{14} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$439 \div 11 = 39 \text{ remainder } 10$$

$$\begin{array}{r}
 39 \\
 11 \mid 439 \\
 \underline{33} \\
 -- \\
 109 \\
 \underline{99} \\
 -- \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$439 \div 13 = 33 \text{ remainder } 10$$

$$\begin{array}{r}
 33 \\
 13 \mid 439 \\
 \underline{39} \\
 -- \\
 49 \\
 \underline{39} \\
 -- \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$439 \div 17 = 25 \text{ remainder } 14$$

$$\begin{array}{r}
 25 \\
 17 \mid 439 \\
 \underline{34} \\
 -- \\
 99 \\
 \underline{85} \\
 -- \\
 14 \leftarrow \text{remainder}
 \end{array}$$

$$439 \div 19 = 23 \text{ remainder } 2$$

| | | |
|----|----|---------------|
| | 23 | |
| 19 | | 439 |
| | | 38 |
| | | -- |
| | | 59 |
| | | 57 |
| | | -- |
| | | 2 ← remainder |

P₈₆ 443

$$443 \div 2 = 221 \text{ remainder } 1$$

$$\begin{array}{r} 221 \\ 2 \overline{) 443} \\ \underline{4} \\ - \\ 4 \\ \underline{4} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$443 \div 3 = 147 \text{ remainder } 2$$

$$\begin{array}{r} 147 \\ 3 \overline{) 443} \\ \underline{3} \\ - \\ 14 \\ \underline{12} \\ - - \\ 23 \\ \underline{21} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$443 \div 5 = 88 \text{ remainder } 3$$

$$\begin{array}{r} 88 \\ 5 \overline{) 443} \\ \underline{40} \\ - - \\ 43 \\ \underline{40} \\ - - \\ 3 \leftarrow \text{remainder} \end{array}$$

$$443 \div 7 = 63 \text{ remainder } 2$$

$$\begin{array}{r}
 63 \\
 7 \mid 443 \\
 \underline{42} \\
 -- \\
 23 \\
 \underline{21} \\
 -- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$443 \div 11 = 40 \text{ remainder } 3$$

$$\begin{array}{r}
 40 \\
 11 \mid 443 \\
 \underline{44} \\
 -- \\
 3 \\
 \underline{0} \\
 - \\
 3 \leftarrow \text{remainder}
 \end{array}$$

$$443 \div 13 = 34 \text{ remainder } 1$$

$$\begin{array}{r}
 34 \\
 13 \mid 443 \\
 \underline{39} \\
 -- \\
 53 \\
 \underline{52} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$443 \div 17 = 26 \text{ remainder } 1$$

$$\begin{array}{r}
 26 \\
 17 \mid 443 \\
 \underline{34} \\
 -- \\
 103 \\
 \underline{102} \\
 --- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$443 \div 19 = 23 \text{ remainder } 6$$

| | | |
|----|----|---------------|
| | 23 | |
| 19 | | 443 |
| | | 38 |
| | | -- |
| | | 63 |
| | | 57 |
| | | -- |
| | | 6 ← remainder |

P₈₇ 449

$$449 \div 2 = 224 \text{ remainder } 1$$

$$\begin{array}{r} 224 \\ 2 \mid 449 \\ \underline{4} \\ - \\ 4 \\ \underline{4} \\ - \\ 9 \\ \underline{8} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$449 \div 3 = 149 \text{ remainder } 2$$

$$\begin{array}{r} 149 \\ 3 \mid 449 \\ \underline{3} \\ - \\ 14 \\ \underline{12} \\ - - \\ 29 \\ \underline{27} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$449 \div 5 = 89 \text{ remainder } 4$$

$$\begin{array}{r} 89 \\ 5 \mid 449 \\ \underline{40} \\ - - \\ 49 \\ \underline{45} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$449 \div 7 = 64 \text{ remainder } 1$$

$$\begin{array}{r}
 64 \\
 7 \mid 449 \\
 42 \\
 \hline
 29 \\
 28 \\
 \hline
 1 \leftarrow \text{remainder}
 \end{array}$$

$$449 \div 11 = 40 \text{ remainder } 9$$

$$\begin{array}{r}
 40 \\
 11 \mid 449 \\
 44 \\
 \hline
 9 \\
 0 \\
 \hline
 9 \leftarrow \text{remainder}
 \end{array}$$

$$449 \div 13 = 34 \text{ remainder } 7$$

$$\begin{array}{r}
 34 \\
 13 \mid 449 \\
 39 \\
 \hline
 59 \\
 52 \\
 \hline
 7 \leftarrow \text{remainder}
 \end{array}$$

$$449 \div 17 = 26 \text{ remainder } 7$$

$$\begin{array}{r}
 26 \\
 17 \mid 449 \\
 34 \\
 \hline
 109 \\
 102 \\
 \hline
 7 \leftarrow \text{remainder}
 \end{array}$$

$$449 \div 19 = 23 \text{ remainder } 12$$

| | | |
|----|----|----------------|
| | 23 | |
| 19 | | 449 |
| | | 38 |
| | | -- |
| | | 69 |
| | | 57 |
| | | -- |
| | | 12 ← remainder |

P₈₈ 457

$$457 \div 2 = 228 \text{ remainder } 1$$

$$\begin{array}{r} 228 \\ 2 \overline{) 457} \\ \underline{4} \\ - \\ 5 \\ \underline{4} \\ - \\ 17 \\ \underline{16} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$457 \div 3 = 152 \text{ remainder } 1$$

$$\begin{array}{r} 152 \\ 3 \overline{) 457} \\ \underline{3} \\ - \\ 15 \\ \underline{15} \\ - - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$457 \div 5 = 91 \text{ remainder } 2$$

$$\begin{array}{r} 91 \\ 5 \overline{) 457} \\ \underline{45} \\ - - \\ 7 \\ \underline{5} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$457 \div 7 = 65 \text{ remainder } 2$$

$$\begin{array}{r}
 65 \\
 7 \mid 457 \\
 \underline{42} \\
 -- \\
 37 \\
 \underline{35} \\
 -- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$457 \div 11 = 41 \text{ remainder } 6$$

$$\begin{array}{r}
 41 \\
 11 \mid 457 \\
 \underline{44} \\
 -- \\
 17 \\
 \underline{11} \\
 -- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$457 \div 13 = 35 \text{ remainder } 2$$

$$\begin{array}{r}
 35 \\
 13 \mid 457 \\
 \underline{39} \\
 -- \\
 67 \\
 \underline{65} \\
 -- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$457 \div 17 = 26 \text{ remainder } 15$$

$$\begin{array}{r}
 26 \\
 17 \mid 457 \\
 \underline{34} \\
 -- \\
 117 \\
 \underline{102} \\
 --- \\
 15 \leftarrow \text{remainder}
 \end{array}$$

$$457 \div 19 = 24 \text{ remainder } 1$$

24
19 | 457
38
--
77
76
--
1 ← remainder

P₈₉ 461

$$461 \div 2 = 230 \text{ remainder } 1$$

$$\begin{array}{r} 230 \\ 2 \overline{) 461} \\ \underline{4} \\ - \\ 6 \\ \underline{6} \\ - \\ 1 \\ \underline{0} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$461 \div 3 = 153 \text{ remainder } 2$$

$$\begin{array}{r} 153 \\ 3 \overline{) 461} \\ \underline{3} \\ - \\ 16 \\ \underline{15} \\ - \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$461 \div 5 = 92 \text{ remainder } 1$$

$$\begin{array}{r} 92 \\ 5 \overline{) 461} \\ \underline{45} \\ - \\ 11 \\ \underline{10} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$461 \div 7 = 65 \text{ remainder } 6$$

$$\begin{array}{r}
 65 \\
 7 \mid 461 \\
 42 \\
 -- \\
 41 \\
 35 \\
 -- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$461 \div 11 = 41 \text{ remainder } 10$$

$$\begin{array}{r}
 41 \\
 11 \mid 461 \\
 44 \\
 -- \\
 21 \\
 11 \\
 -- \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$461 \div 13 = 35 \text{ remainder } 6$$

$$\begin{array}{r}
 35 \\
 13 \mid 461 \\
 39 \\
 -- \\
 71 \\
 65 \\
 -- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$461 \div 17 = 27 \text{ remainder } 2$$

$$\begin{array}{r}
 27 \\
 17 \mid 461 \\
 34 \\
 -- \\
 121 \\
 119 \\
 --- \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$461 \div 19 = 24 \text{ remainder } 5$$

| | | |
|----|----|---------------|
| | 24 | |
| 19 | | 461 |
| | | 38 |
| | | -- |
| | | 81 |
| | | 76 |
| | | -- |
| | | 5 ← remainder |

P₉₀ 463

$$463 \div 2 = 231 \text{ remainder } 1$$

$$\begin{array}{r} 231 \\ 2 \overline{) 463} \\ \underline{4} \\ - \\ 6 \\ \underline{6} \\ - \\ 3 \\ \underline{2} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$463 \div 3 = 154 \text{ remainder } 1$$

$$\begin{array}{r} 154 \\ 3 \overline{) 463} \\ \underline{3} \\ - \\ 16 \\ \underline{15} \\ - \\ 13 \\ \underline{12} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$463 \div 5 = 92 \text{ remainder } 3$$

$$\begin{array}{r} 92 \\ 5 \overline{) 463} \\ \underline{45} \\ - \\ 13 \\ \underline{10} \\ - \\ 3 \leftarrow \text{remainder} \end{array}$$

$$463 \div 7 = 66 \text{ remainder } 1$$

$$\begin{array}{r}
 66 \\
 7 \mid 463 \\
 \underline{42} \\
 -- \\
 43 \\
 \underline{42} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$463 \div 11 = 42 \text{ remainder } 1$$

$$\begin{array}{r}
 42 \\
 11 \mid 463 \\
 \underline{44} \\
 -- \\
 23 \\
 \underline{22} \\
 -- \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$463 \div 13 = 35 \text{ remainder } 8$$

$$\begin{array}{r}
 35 \\
 13 \mid 463 \\
 \underline{39} \\
 -- \\
 73 \\
 \underline{65} \\
 -- \\
 8 \leftarrow \text{remainder}
 \end{array}$$

$$463 \div 17 = 27 \text{ remainder } 4$$

$$\begin{array}{r}
 27 \\
 17 \mid 463 \\
 \underline{34} \\
 -- \\
 123 \\
 \underline{119} \\
 --- \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$463 \div 19 = 24 \text{ remainder } 7$$

| | | |
|----|----|---------------|
| | 24 | |
| 19 | | 463 |
| | | 38 |
| | | -- |
| | | 83 |
| | | 76 |
| | | -- |
| | | 7 ← remainder |

P₉₁ 467

$$467 \div 2 = 233 \text{ remainder } 1$$

$$\begin{array}{r} 233 \\ 2 \overline{) 467} \\ \underline{4} \\ - \\ 6 \\ \underline{6} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$467 \div 3 = 155 \text{ remainder } 2$$

$$\begin{array}{r} 155 \\ 3 \overline{) 467} \\ \underline{3} \\ - \\ 16 \\ \underline{15} \\ - \\ 17 \\ \underline{15} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$467 \div 5 = 93 \text{ remainder } 2$$

$$\begin{array}{r} 93 \\ 5 \overline{) 467} \\ \underline{45} \\ - \\ 17 \\ \underline{15} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$467 \div 7 = 66 \text{ remainder } 5$$

$$\begin{array}{r}
 66 \\
 7 \mid 467 \\
 \underline{42} \\
 -- \\
 47 \\
 \underline{42} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$467 \div 11 = 42 \text{ remainder } 5$$

$$\begin{array}{r}
 42 \\
 11 \mid 467 \\
 \underline{44} \\
 -- \\
 27 \\
 \underline{22} \\
 -- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$467 \div 13 = 35 \text{ remainder } 12$$

$$\begin{array}{r}
 35 \\
 13 \mid 467 \\
 \underline{39} \\
 -- \\
 77 \\
 \underline{65} \\
 -- \\
 12 \leftarrow \text{remainder}
 \end{array}$$

$$467 \div 17 = 27 \text{ remainder } 8$$

$$\begin{array}{r}
 27 \\
 17 \mid 467 \\
 \underline{34} \\
 -- \\
 127 \\
 \underline{119} \\
 --- \\
 8 \leftarrow \text{remainder}
 \end{array}$$

$$467 \div 19 = 24 \text{ remainder } 11$$

| | | |
|----|----|----------------|
| | 24 | |
| 19 | | 467 |
| | | 38 |
| | | -- |
| | | 87 |
| | | 76 |
| | | -- |
| | | 11 ← remainder |

P₉₂ 479

$$479 \div 2 = 239 \text{ remainder } 1$$

$$\begin{array}{r} 239 \\ 2 \overline{) 479} \\ \underline{4} \\ - \\ 7 \\ \underline{6} \\ - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$479 \div 3 = 159 \text{ remainder } 2$$

$$\begin{array}{r} 159 \\ 3 \overline{) 479} \\ \underline{3} \\ - \\ 17 \\ \underline{15} \\ - - \\ 29 \\ \underline{27} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$479 \div 5 = 95 \text{ remainder } 4$$

$$\begin{array}{r} 95 \\ 5 \overline{) 479} \\ \underline{45} \\ - - \\ 29 \\ \underline{25} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$479 \div 7 = 68 \text{ remainder } 3$$

$$\begin{array}{r}
 68 \\
 7 \mid 479 \\
 42 \\
 \hline
 59 \\
 56 \\
 \hline
 3 \leftarrow \text{remainder}
 \end{array}$$

$$479 \div 11 = 43 \text{ remainder } 6$$

$$\begin{array}{r}
 43 \\
 11 \mid 479 \\
 44 \\
 \hline
 39 \\
 33 \\
 \hline
 6 \leftarrow \text{remainder}
 \end{array}$$

$$479 \div 13 = 36 \text{ remainder } 11$$

$$\begin{array}{r}
 36 \\
 13 \mid 479 \\
 39 \\
 \hline
 89 \\
 78 \\
 \hline
 11 \leftarrow \text{remainder}
 \end{array}$$

$$479 \div 17 = 28 \text{ remainder } 3$$

$$\begin{array}{r}
 28 \\
 17 \mid 479 \\
 34 \\
 \hline
 139 \\
 136 \\
 \hline
 3 \leftarrow \text{remainder}
 \end{array}$$

$$479 \div 19 = 25 \text{ remainder } 4$$

| | | |
|----|----|---------------|
| | 25 | |
| 19 | | 479 |
| | | 38 |
| | | -- |
| | | 99 |
| | | 95 |
| | | -- |
| | | 4 ← remainder |

P₉₃ 487

$$487 \div 2 = 243 \text{ remainder } 1$$

$$\begin{array}{r} 243 \\ 2 \overline{) 487} \\ \underline{4} \\ - \\ 8 \\ \underline{8} \\ - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$487 \div 3 = 162 \text{ remainder } 1$$

$$\begin{array}{r} 162 \\ 3 \overline{) 487} \\ \underline{3} \\ - \\ 18 \\ \underline{18} \\ - - \\ 7 \\ \underline{6} \\ - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$487 \div 5 = 97 \text{ remainder } 2$$

$$\begin{array}{r} 97 \\ 5 \overline{) 487} \\ \underline{45} \\ - - \\ 37 \\ \underline{35} \\ - - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$487 \div 7 = 69 \text{ remainder } 4$$

```

      69
7 | 487
   42
   --
   67
   63
   --
   4 ← remainder

```

$487 \div 11 = 44 \text{ remainder } 3$

```

      44
11 | 487
   44
   --
   47
   44
   --
   3 ← remainder

```

$487 \div 13 = 37 \text{ remainder } 6$

```

      37
13 | 487
   39
   --
   97
   91
   --
   6 ← remainder

```

$487 \div 17 = 28 \text{ remainder } 11$

```

      28
17 | 487
   34
   --
   147
   136
   ---
   11 ← remainder

```

$487 \div 19 = 25 \text{ remainder } 12$

| | | |
|----|----|----------------|
| | 25 | |
| 19 | | 487 |
| | | 38 |
| | | -- |
| | | 107 |
| | | 95 |
| | | -- |
| | | 12 ← remainder |

P₉₄ 491

$$491 \div 2 = 245 \text{ remainder } 1$$

$$\begin{array}{r} 245 \\ 2 \mid 491 \\ \underline{4} \\ - \\ 9 \\ \underline{8} \\ - \\ 11 \\ \underline{10} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$491 \div 3 = 163 \text{ remainder } 2$$

$$\begin{array}{r} 163 \\ 3 \mid 491 \\ \underline{3} \\ - \\ 19 \\ \underline{18} \\ - - \\ 11 \\ \underline{9} \\ - \\ 2 \leftarrow \text{remainder} \end{array}$$

$$491 \div 5 = 98 \text{ remainder } 1$$

$$\begin{array}{r} 98 \\ 5 \mid 491 \\ \underline{45} \\ - - \\ 41 \\ \underline{40} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$491 \div 7 = 70 \text{ remainder } 1$$

$$\begin{array}{r}
 70 \\
 7 \mid 491 \\
 \underline{49} \\
 11 \\
 \underline{10} \\
 1 \\
 1 \leftarrow \text{remainder}
 \end{array}$$

$$491 \div 11 = 44 \text{ remainder } 7$$

$$\begin{array}{r}
 44 \\
 11 \mid 491 \\
 \underline{44} \\
 51 \\
 \underline{44} \\
 7 \\
 7 \leftarrow \text{remainder}
 \end{array}$$

$$491 \div 13 = 37 \text{ remainder } 10$$

$$\begin{array}{r}
 37 \\
 13 \mid 491 \\
 \underline{39} \\
 101 \\
 \underline{91} \\
 10 \\
 10 \leftarrow \text{remainder}
 \end{array}$$

$$491 \div 17 = 28 \text{ remainder } 15$$

$$\begin{array}{r}
 28 \\
 17 \mid 491 \\
 \underline{34} \\
 151 \\
 \underline{136} \\
 15 \\
 15 \leftarrow \text{remainder}
 \end{array}$$

$$491 \div 19 = 25 \text{ remainder } 16$$

| | | |
|----|----|----------------|
| | 25 | |
| 19 | | 491 |
| | | 38 |
| | | -- |
| | | 111 |
| | | 95 |
| | | -- |
| | | 16 ← remainder |

P₉₅ 499

$$499 \div 2 = 249 \text{ remainder } 1$$

$$\begin{array}{r} 249 \\ 2 \mid 499 \\ \underline{4} \\ - \\ 9 \\ \underline{8} \\ - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$499 \div 3 = 166 \text{ remainder } 1$$

$$\begin{array}{r} 166 \\ 3 \mid 499 \\ \underline{3} \\ - \\ 19 \\ \underline{18} \\ - - \\ 19 \\ \underline{18} \\ - - \\ 1 \leftarrow \text{remainder} \end{array}$$

$$499 \div 5 = 99 \text{ remainder } 4$$

$$\begin{array}{r} 99 \\ 5 \mid 499 \\ \underline{45} \\ - - \\ 49 \\ \underline{45} \\ - - \\ 4 \leftarrow \text{remainder} \end{array}$$

$$499 \div 7 = 71 \text{ remainder } 2$$

$$\begin{array}{r}
 71 \\
 7 \mid 499 \\
 \underline{49} \\
 -- \\
 9 \\
 \underline{7} \\
 - \\
 2 \leftarrow \text{remainder}
 \end{array}$$

$$499 \div 11 = 45 \text{ remainder } 4$$

$$\begin{array}{r}
 45 \\
 11 \mid 499 \\
 \underline{44} \\
 -- \\
 59 \\
 \underline{55} \\
 -- \\
 4 \leftarrow \text{remainder}
 \end{array}$$

$$499 \div 13 = 38 \text{ remainder } 5$$

$$\begin{array}{r}
 38 \\
 13 \mid 499 \\
 \underline{39} \\
 -- \\
 109 \\
 \underline{104} \\
 --- \\
 5 \leftarrow \text{remainder}
 \end{array}$$

$$499 \div 17 = 29 \text{ remainder } 6$$

$$\begin{array}{r}
 29 \\
 17 \mid 499 \\
 \underline{34} \\
 -- \\
 159 \\
 \underline{153} \\
 --- \\
 6 \leftarrow \text{remainder}
 \end{array}$$

$$499 \div 19 = 26 \text{ remainder } 5$$

| | | |
|----|----|---------------|
| | 26 | |
| 19 | | 499 |
| | | 38 |
| | | -- |
| | | 119 |
| | | 114 |
| | | --- |
| | | 5 ← remainder |

P₉₆ 503

$$503 \div 2 = 251 \text{ remainder } 1$$

```

  251
2 | 503
  4
  -
  10
  10
  --
   3
   2
   -
   1 ← remainder

```

$$503 \div 3 = 167 \text{ remainder } 2$$

```

    167
3 | 503
   3
   -
  20
  18
  --
  23
  21
  --
  2 ← remainder

```

$$503 \div 5 = 100 \text{ remainder } 3$$

$$\begin{array}{r} 100 \\ 5 \overline{) 503} \\ \underline{5} \\ 0 \\ 0 \\ \underline{} \\ 3 \\ 0 \end{array}$$

-
3 ← remainder

$$503 \div 7 = 71 \text{ remainder } 6$$

71
7 | 503
49
--
13
7
-

6 ← remainder

$$503 \div 11 = 45 \text{ remainder } 8$$

45
11 | 503
44
--
63
55
--

8 ← remainder

$$503 \div 13 = 38 \text{ remainder } 9$$

38
13 | 503
39
--
113
104

9 ← remainder

$$503 \div 17 = 29 \text{ remainder } 10$$

29
17 | 503
34
--
163
153

10 ← remainder

$$503 \div 19 = 26 \text{ remainder } 9$$

$$\begin{array}{r} 26 \\ 19 \overline{) 503} \\ \underline{38} \end{array}$$

--
123
114

9 ← remainder

P₉₇ 509

$$509 \div 2 = 254 \text{ remainder } 1$$

$$\begin{array}{r} 254 \\ 2 \overline{) 509} \\ \underline{4} \\ 10 \\ \underline{10} \\ 0 \\ 9 \\ \underline{8} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$509 \div 3 = 169 \text{ remainder } 2$$

$$\begin{array}{r} 169 \\ 3 \overline{) 509} \\ \underline{3} \\ 20 \\ \underline{18} \\ 29 \\ \underline{27} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$509 \div 5 = 101 \text{ remainder } 4$$

$$\begin{array}{r} 101 \\ 5 \overline{) 509} \\ \underline{5} \\ 0 \\ \underline{0} \\ 9 \\ \underline{5} \\ 4 \end{array}$$

-
4 ← remainder

$$509 \div 7 = 72 \text{ remainder } 5$$

72
7 | 509
49
--
19
14
--
5 ← remainder

$$509 \div 11 = 46 \text{ remainder } 3$$

46
11 | 509
44
--
69
66
--
3 ← remainder

$$509 \div 13 = 39 \text{ remainder } 2$$

39
13 | 509
39
--
119
117
--
2 ← remainder

$$509 \div 17 = 29 \text{ remainder } 16$$

29
17 | 509
34
--
169
153

16 ← remainder

$$509 \div 19 = 26 \text{ remainder } 15$$

$$\begin{array}{r} 26 \\ 19 \overline{) 509} \\ \underline{38} \end{array}$$

--
129
114

15 ← remainder

P₉₈ 521

$$521 \div 2 = 260 \text{ remainder } 1$$

$$\begin{array}{r} 260 \\ 2 \mid 521 \\ \underline{4} \\ 12 \\ \underline{12} \\ 0 \\ \underline{0} \\ 1 \leftarrow \text{remainder} \end{array}$$

$$521 \div 3 = 173 \text{ remainder } 2$$

$$\begin{array}{r} 173 \\ 3 \mid 521 \\ \underline{3} \\ 22 \\ \underline{21} \\ 11 \\ \underline{9} \\ 2 \leftarrow \text{remainder} \end{array}$$

$$521 \div 5 = 104 \text{ remainder } 1$$

$$\begin{array}{r} 104 \\ 5 \mid 521 \\ \underline{5} \\ 2 \\ \underline{0} \\ 21 \\ \underline{20} \\ 1 \end{array}$$

--
1 ← remainder

$$521 \div 7 = 74 \text{ remainder } 3$$

74
7 | 521
49

--
31
28
--
3 ← remainder

$$521 \div 11 = 47 \text{ remainder } 4$$

47
11 | 521
44

--
81
77
--
4 ← remainder

$$521 \div 13 = 40 \text{ remainder } 1$$

40
13 | 521
52

--
1
0
-
1 ← remainder

$$521 \div 17 = 30 \text{ remainder } 11$$

30
17 | 521
51

--
11
0

-
11 ← remainder

$$521 \div 19 = 27 \text{ remainder } 8$$

$$\begin{array}{r} 27 \\ 19 \overline{) 521} \\ \underline{38} \end{array}$$

--

141

133

8 ← remainder

P₉₉ 523

$$523 \div 2 = 261 \text{ remainder } 1$$

$$\begin{array}{r} 261 \\ 2 \overline{) 523} \\ \underline{4} \\ 12 \\ \underline{12} \\ 0 \\ 3 \\ \underline{2} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$523 \div 3 = 174 \text{ remainder } 1$$

$$\begin{array}{r} 174 \\ 3 \overline{) 523} \\ \underline{3} \\ 22 \\ \underline{21} \\ 1 \\ 13 \\ \underline{12} \\ 1 \\ 1 \leftarrow \text{remainder} \end{array}$$

$$523 \div 5 = 104 \text{ remainder } 3$$

$$\begin{array}{r} 104 \\ 5 \overline{) 523} \\ \underline{5} \\ 2 \\ \underline{0} \\ 23 \\ \underline{20} \\ 3 \end{array}$$

--
3 ← remainder

$$523 \div 7 = 74 \text{ remainder } 5$$

74
7 | 523
49

--
33
28
--
5 ← remainder

$$523 \div 11 = 47 \text{ remainder } 6$$

47
11 | 523
44

--
83
77
--
6 ← remainder

$$523 \div 13 = 40 \text{ remainder } 3$$

40
13 | 523
52

--
3
0
-
3 ← remainder

$$523 \div 17 = 30 \text{ remainder } 13$$

30
17 | 523
51

--
13
0

-
13 ← remainder

$$523 \div 19 = 27 \text{ remainder } 10$$

27
19 | 523
38
--
143
133

10 ← remainder

P₁₀₀ 541

$$541 \div 2 = 270 \text{ remainder } 1$$

$$\begin{array}{r} 270 \\ 2 \mid 541 \\ \underline{4} \\ 14 \\ \underline{14} \\ 10 \\ \underline{10} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$541 \div 3 = 180 \text{ remainder } 1$$

$$\begin{array}{r} 180 \\ 3 \mid 541 \\ \underline{3} \\ 24 \\ \underline{24} \\ 10 \\ \underline{10} \\ 1 \end{array} \leftarrow \text{remainder}$$

$$541 \div 5 = 108 \text{ remainder } 1$$

$$\begin{array}{r} 108 \\ 5 \mid 541 \\ \underline{5} \\ 40 \\ \underline{40} \\ 1 \end{array}$$

--
1 ← remainder

$$541 \div 7 = 77 \text{ remainder } 2$$

77
7 | 541
49

--
51
49
--
2 ← remainder

$$541 \div 11 = 49 \text{ remainder } 2$$

49
11 | 541
44

--
101
99
--
2 ← remainder

$$541 \div 13 = 41 \text{ remainder } 8$$

41
13 | 541
52

--
21
13
--
8 ← remainder

$$541 \div 17 = 31 \text{ remainder } 14$$

31
17 | 541
51

--
31
17

--
14 ← remainder

$$541 \div 19 = 28 \text{ remainder } 9$$

28
19 | 541
38
--
161
152

9 ← remainder

$$541 \div 23 = 23 \text{ remainder } 12$$

23
23 | 541
46
--
81
69
--
12 ← remainder

