

$$fact = 1 \times 2 \times 3 \times 4 \times 5 \quad n = 5$$

```

for (int i = 1; i <= n; i++) {
    fact = fact * i;
}
cout << fact;

```

$$5! \times 4! \times 3! \times 2! \times 1!$$

$$\begin{aligned}
 2 \times 3 &= 6 \\
 6 \times 4 &= 24 \\
 24 \times 5 &= 120
 \end{aligned}$$

GCD =

$$\begin{aligned}
 36 &\rightarrow (2, 3, 4, 6, 9, 12, 18, 36) \\
 60 &\rightarrow (2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60)
 \end{aligned}$$

i < small

i = 1

$$\begin{aligned}
 &[(n1 \% i == 0 \text{ \& \& } n2 \% i == 0)] \\
 &\quad GCD = i
 \end{aligned}$$

$$\begin{aligned}
 n1 &= 36 \\
 n2 &= 60
 \end{aligned}$$

$$GCD = 1 \times 2 \times 3 \times 6$$

```

for (int i = 1; i <= small; i++) {
    if (n1 % i == 0 && n2 % i == 0) {
        GCD = i;
    }
}

```

$$7 \times 6 = 42$$

$$\begin{aligned}
 6 \% 1 &= 0 \text{ \& \& } 12 \% 1 = 0 \\
 6 \% 2 &= 0 \text{ \& \& } 12 \% 2 = 0 \\
 6 \% 3 &= 0 \text{ \& \& } 12 \% 3 = 0 \\
 6 \% 4 &= 0 \text{ \& \& } 12 \% 4 = 0 \\
 6 \% 5 &= 0 \text{ \& \& } 12 \% 5 = 0 \\
 6 \% 6 &= 0 \text{ \& \& } 12 \% 6 = 0
 \end{aligned}$$

$$\begin{aligned}
 num1 &= 36 \\
 num2 &= 60
 \end{aligned}$$

$$\begin{array}{r}
 \text{divisor} \quad 36 \overline{) 60} \\
 \underline{36} \phantom{0} \\
 24 \phantom{0} \\
 \underline{24} \\
 0
 \end{array}$$

dividend

$$\begin{aligned}
 rem &= \text{dividend} \% \text{divisor} \\
 \text{dividend} &= \text{divisor}
 \end{aligned}$$

$$\begin{array}{r}
 24 \overline{) 36} \\
 \underline{24} \phantom{0} \\
 12 \phantom{0} \\
 24 \phantom{0} \\
 \underline{24} \\
 00
 \end{array}$$

$$\text{dividend} = \text{divisor}$$

$$\text{divisor} = \text{rem}$$

$$\begin{array}{r}
 60 \overline{) 36} \\
 \underline{60} \\
 36 \overline{) 60} \\
 \underline{36} \\
 24
 \end{array}$$

36 60

$$\begin{array}{r}
 60 \overline{) 36} \\
 \underline{60} \\
 36 \overline{) 60} \\
 \underline{36} \\
 24 \overline{) 36} \\
 \underline{24} \\
 12 \overline{) 24} \\
 \underline{12} \\
 12 \overline{) 24} \\
 \underline{12} \\
 12
 \end{array}$$

$$\left[ \begin{array}{l}
 \text{res} = \text{dividend} \% \text{divisor} \\
 \text{dividend} = \text{divisor} \\
 \text{divisor} = \text{rem}
 \end{array} \right.$$

$$(\text{dividend} \% \text{divisor} \neq 0)$$

$$\begin{array}{r|l}
 2 & 398 \\
 3 & 129
 \end{array}$$

23337

	2	378
	3	<u>189</u>
	3	63
	3	21
7	7	7
	<del>2</del>	<del>1</del>

$$n = 1852$$

$$\underline{2581}$$