Factorial-Type Numerical Calendar, **Zenodo**,
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Factorial-Type Numerical Calendar

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Abstract

*This short work brings **factorial-type** numerical representations of the **Calendar**. It is based on a functional equation of three variables representing **"day"**, **"month"** and **"year"**. It is given for the years ending in 20 and 2020. The other years can be calculated on similar bases.*

Contents

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1 Numerical Representations of Year 20

Below are three ways of representations of the year ending in 20.

- **First Way**

Let's consider a function of two variable function

$$f(d,m) := 5! + d \times 10^4 + (m-1) \times 10^2. \tag{1}$$

The number d and m represents the **day** and **month** respectively.

Based on (1) below are few examples:

Example 1.1. *Let's suppose, we want to write April 15, 20, i,e., 15.04.20. Let's consider* $d = 15$ *and* $m = 04$ *in* (1)*, we have*

$$\begin{aligned} f(15,04) &:= 5! + 15 \times 10^4 + (04-1) \times 10^2 \\ &:= 5! + 15 \times 10^4 + 3 \times 10^2 \\ &:= 150420, \ i.e., \ 15.04.20 \end{aligned}$$

Example 1.2. *Let's suppose, we want to write November 04, 20, i.e., 04.11.20. Let's consider* $d = 04$ *and* $m = 11$ *in* (1)*, we have*

$$\begin{aligned} f(04,11) &:= 5! + 04 \times 10^4 + (11-1) \times 10^2 \\ &:= 5! + 4 \times 10^4 + 10 \times 10^3 \\ &:= 041120, \ i.e., \ 04.11.20. \end{aligned}$$

- **Second Way**

Let's consider a function of two variables:

$$g(d,m) := 8! + (d-4) \times 10^4 + (m-3) \times 10^2. \tag{2}$$

The number d and m represents the **day** and **month** respectively.

Based on (2) below are few examples:

Example 1.3. *Let's suppose, we want to write March 20, 20, i.e., 20.03.20. Let's consider* $d = 20$ *and* $m = 03$ *in* (1)*, we have*

$$\begin{aligned} g(20,03) &:= 8! + (20-4) \times 10^4 + (03-3) \times 10^2 \\ &:= 8! + 16 \times 10^4 \\ &:= 200320, \ i.e., \ 20.03.20 \end{aligned}$$

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Example 1.4. *Let's suppose, we want to write October 09, 20, i.e., 09.10.20. Let's consider* $d = 09$ *and* $m = 10$ *in* (1)*, we have*

$$\begin{aligned} g(09,10) &:= 8! + (09-4) \times 10^4 + (10-3) \times 10^2 \\ &:= 8! + 5 \times 10^4 + 7 \times 10^2 \\ &:= 091020, \ i.e., \ 09.10.20. \end{aligned}$$

Remark 1.1. *Comparing the expressions given in* (1) *and* (2)*, we observe that the months January and February can be written in simplified form using* (1)*, and the months March onwards are simplified with the function* (2)*. Below are some examples:*

$$\begin{aligned} 10120 &:= 5! + 10^4 && = 8! - 3 \times 10^4 - 2 \times 10^2 \\ 10220 &:= 5! + 10^4 + 10^2 && = 8! - 3 \times 10^4 - 10^2 \\ 10320 &:= 5! + 10^4 + 2 \times 10^2 && = 8! - 3 \times 10^4 \end{aligned}$$

$$\begin{aligned} 50120 &:= 5! + 5 \times 10^4 && = 8! + 10^4 - 2 \times 10^2 \\ 50220 &:= 5! + 5 \times 10^4 + 10^2 && = 8! + 10^4 - 10^2 \\ 50320 &:= 5! + 5 \times 10^4 + 2 \times 10^2 && = 8! + 10^4 \end{aligned}$$

Above two ways are written with 5! and 8!. Let's see below the third way based on 6!.

- **Third Way**

Let's consider the following function of two variables:

$$h(d,m) := 6! + d \times 10^4 + (m-7) \times 10^2. \tag{3}$$

The number d and m represents the **days** and **months** respectively.

Based on (3) below are few examples:

Example 1.5. *Let's suppose, we want to write October 22, 20, i.e., 22.10.20. In this case, let's consider* $d := 22$ *and* $m := 10$ *in* (3)*, we get*

$$\begin{aligned} h(22,10) &:= 6! + 22 \times 10^4 + (10-7) \times 10^2 \\ &:= 6! + 22 \times 10^4 + 3 \times 10^2 \\ &:= 221020, \ i.e., \ 22.10.20. \end{aligned}$$

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Example 1.6. *Let's suppose, we want to write July 12, 20, i.e., 12.07.20. In this case, let's consider* $d := 12$ *and* $m := 07$*, in* (3)*, we get*

$$\begin{aligned} h(12,07) &:= 6! + 12 \times 10^4 + (07-7) \times 10^2 \\ &:= 6! + 12 \times 10^4 \\ &:= 120720, \ i.e., \ 12.07.20. \end{aligned}$$

Above, we have seen three different functions given in (1), (2) and (3). These three functions can be written together as a single function represented by the 5!, 8! and 6!. See below:

$$\begin{aligned} F(d,m) &:= 5! + d \times 10^4 \qquad + (m-1) \times 10^2 \\ &:= 8! + (d-4) \times 10^4 + (m-3) \times 10^2 \\ &:= 6! + d \times 10^4 \qquad + (m-7) \times 10^2 \end{aligned} \tag{4}$$

where **d** and **m** represents the **day** and **month** respectively.

Simplifying the above three functions, we get a single function given by

$$F(d,m) := d \times 10^4 + m \times 10^2 + 20. \tag{5}$$

The function given in (5) give the values in terms of powers of 10 with coefficients, while the expressions (1), (2) and (3) are factorial-type representations. The expression (5) is always known in the literature, while the expressions (1), (2) and (3) are studied first time in this work. In order to have some betterness of using the expressions (1), (2) and (3) see below some examples given as Remark 1.2.

Remark 1.2. *In all the three situations, below are some interesting examples:*

$$\begin{aligned} f(01,01) &:= 5! + 10^4 = 010120, \ i.e., \ 01.01.20 \\ f(10,10) &:= 5! + 10^5 = 100120, \ i.e., \ 10.01.20 \\ h(01,07) &:= 6! + 10^4 = 010720, \ i.e., \ 01.07.20 \\ h(10,07) &:= 6! + 10^5 = 100720, \ i.e., \ 01.07.20 \\ g(05,03) &:= 8! + 10^4 = 050320, \ i.e., \ 05.03.20 \\ g(04,04) &:= 8! + 10^2 = 040420, \ i.e., \ 04.04.20 \\ g(14,03) &:= 8! + 10^5 = 140420, \ i.e., \ 14.03.20 \end{aligned}$$

In second way, the function given in (2) *with 8!, we have an interesting* ***factorial day*** *given by*

$$g(04,03) := 8! = 040320, \ \ i.e., \ \ 04.03.20.$$

From the above Remark 1.2, we observe that it is good to write the months **January** and **February** using the formula (1), **March** to **June** using the formula (2) and **July** to **December** using the formula (3)

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1.1 Month-Wise Numerical Representations

This section brings **month-wise** details of each day of year 20 by use of functions given in (1), (2) and (3). The first two months **January** and **February** are with (1). The months **March** to**June** are with (2). Finally the months **July** to **December** are with (3).

1.1.1 January-20

In the (1) consider $m = 1$ and $d = 1$ to 31, then we have the following values representing the days of **January-20**.

◊ *January - 20* ◊

$$\mathbf{010120} := 5! + \mathbf{01} \times 10^4$$
$$\mathbf{020120} := 5! + \mathbf{02} \times 10^4$$
$$\mathbf{030120} := 5! + \mathbf{03} \times 10^4$$
$$\mathbf{040120} := 5! + \mathbf{04} \times 10^4$$
$$\mathbf{050120} := 5! + \mathbf{05} \times 10^4$$
$$\mathbf{060120} := 5! + \mathbf{06} \times 10^4$$
$$\mathbf{070120} := 5! + \mathbf{07} \times 10^4$$
$$\mathbf{080120} := 5! + \mathbf{08} \times 10^4$$
$$\mathbf{090120} := 5! + \mathbf{09} \times 10^4$$
$$\mathbf{100120} := 5! + \mathbf{10} \times 10^4$$
$$\mathbf{110120} := 5! + \mathbf{11} \times 10^4$$
$$\mathbf{120120} := 5! + \mathbf{12} \times 10^4$$
$$\mathbf{130120} := 5! + \mathbf{13} \times 10^4$$
$$\mathbf{140120} := 5! + \mathbf{14} \times 10^4$$
$$\mathbf{150120} := 5! + \mathbf{15} \times 10^4$$
$$\mathbf{160120} := 5! + \mathbf{16} \times 10^4$$
$$\mathbf{170120} := 5! + \mathbf{17} \times 10^4$$
$$\mathbf{180120} := 5! + \mathbf{18} \times 10^4$$
$$\mathbf{190120} := 5! + \mathbf{19} \times 10^4$$
$$\mathbf{200120} := 5! + \mathbf{20} \times 10^4$$
$$\mathbf{210120} := 5! + \mathbf{21} \times 10^4$$
$$\mathbf{220120} := 5! + \mathbf{22} \times 10^4$$
$$\mathbf{230120} := 5! + \mathbf{23} \times 10^4$$
$$\mathbf{240120} := 5! + \mathbf{24} \times 10^4$$
$$\mathbf{250120} := 5! + \mathbf{25} \times 10^4$$
$$\mathbf{260120} := 5! + \mathbf{26} \times 10^4$$
$$\mathbf{270120} := 5! + \mathbf{27} \times 10^4$$
$$\mathbf{280120} := 5! + \mathbf{28} \times 10^4$$
$$\mathbf{290120} := 5! + \mathbf{29} \times 10^4$$
$$\mathbf{300120} := 5! + \mathbf{29} \times 10^4$$
$$\mathbf{310120} := 5! + \mathbf{31} \times 10^4$$

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1.1.2 February-20

In the (1) consider $m = 2$ and $d = 1$ to 29, then we have the following values representing the days of **February-20**.

◊ *February - 20* ◊

$$\mathbf{010220} := 5! + \mathbf{01} \times 10^4 + 10^2$$
$$\mathbf{020220} := 5! + \mathbf{02} \times 10^4 + 10^2$$
$$\mathbf{030220} := 5! + \mathbf{03} \times 10^4 + 10^2$$
$$\mathbf{040220} := 5! + \mathbf{04} \times 10^4 + 10^2$$
$$\mathbf{050220} := 5! + \mathbf{05} \times 10^4 + 10^2$$
$$\mathbf{060220} := 5! + \mathbf{06} \times 10^4 + 10^2$$
$$\mathbf{070220} := 5! + \mathbf{07} \times 10^4 + 10^2$$
$$\mathbf{080220} := 5! + \mathbf{08} \times 10^4 + 10^2$$
$$\mathbf{090220} := 5! + \mathbf{09} \times 10^4 + 10^2$$
$$\mathbf{100220} := 5! + \mathbf{10} \times 10^4 + 10^2$$
$$\mathbf{110220} := 5! + \mathbf{11} \times 10^4 + 10^2$$
$$\mathbf{120220} := 5! + \mathbf{12} \times 10^4 + 10^2$$
$$\mathbf{130220} := 5! + \mathbf{13} \times 10^4 + 10^2$$
$$\mathbf{140220} := 5! + \mathbf{14} \times 10^4 + 10^2$$
$$\mathbf{150220} := 5! + \mathbf{15} \times 10^4 + 10^2$$
$$\mathbf{160220} := 5! + \mathbf{16} \times 10^4 + 10^2$$
$$\mathbf{170220} := 5! + \mathbf{17} \times 10^4 + 10^2$$
$$\mathbf{180220} := 5! + \mathbf{18} \times 10^4 + 10^2$$
$$\mathbf{190220} := 5! + \mathbf{19} \times 10^4 + 10^2$$
$$\mathbf{200220} := 5! + \mathbf{20} \times 10^4 + 10^2$$
$$\mathbf{210220} := 5! + \mathbf{21} \times 10^4 + 10^2$$
$$\mathbf{220220} := 5! + \mathbf{22} \times 10^4 + 10^2$$
$$\mathbf{230220} := 5! + \mathbf{23} \times 10^4 + 10^2$$
$$\mathbf{240220} := 5! + \mathbf{24} \times 10^4 + 10^2$$
$$\mathbf{250220} := 5! + \mathbf{25} \times 10^4 + 10^2$$
$$\mathbf{260220} := 5! + \mathbf{26} \times 10^4 + 10^2$$
$$\mathbf{270220} := 5! + \mathbf{27} \times 10^4 + 10^2$$
$$\mathbf{280220} := 5! + \mathbf{28} \times 10^4 + 10^2$$
$$\mathbf{290220} := 5! + \mathbf{29} \times 10^4 + 10^2$$

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1.1.3 March-20

In the (1) consider $m = 3$ and $d = 1$ to 31, then we have the following values representing the days of **March-20**.

◊ *March - 20* ◊

$$\mathbf{010320} := 8! - \mathbf{03} \times 10^4$$
$$\mathbf{020320} := 8! - \mathbf{02} \times 10^4$$
$$\mathbf{030320} := 8! - \mathbf{01} \times 10^4$$
$$\mathbf{040320} := 8!$$
$$\mathbf{050320} := 8! + \mathbf{01} \times 10^4$$
$$\mathbf{060320} := 8! + \mathbf{02} \times 10^4$$
$$\mathbf{070320} := 8! + \mathbf{03} \times 10^4$$
$$\mathbf{080320} := 8! + \mathbf{04} \times 10^4$$
$$\mathbf{090320} := 8! + \mathbf{05} \times 10^4$$
$$\mathbf{100320} := 8! + \mathbf{06} \times 10^4$$
$$\mathbf{110320} := 8! + \mathbf{07} \times 10^4$$
$$\mathbf{120320} := 8! + \mathbf{08} \times 10^4$$
$$\mathbf{130320} := 8! + \mathbf{09} \times 10^4$$
$$\mathbf{140320} := 8! + \mathbf{10} \times 10^4$$
$$\mathbf{150320} := 8! + \mathbf{11} \times 10^4$$
$$\mathbf{160320} := 8! + \mathbf{12} \times 10^4$$
$$\mathbf{170320} := 8! + \mathbf{13} \times 10^4$$
$$\mathbf{180320} := 8! + \mathbf{14} \times 10^4$$
$$\mathbf{190320} := 8! + \mathbf{15} \times 10^4$$
$$\mathbf{200320} := 8! + \mathbf{16} \times 10^4$$
$$\mathbf{210320} := 8! + \mathbf{17} \times 10^4$$
$$\mathbf{220320} := 8! + \mathbf{18} \times 10^4$$
$$\mathbf{230320} := 8! + \mathbf{19} \times 10^4$$
$$\mathbf{240320} := 8! + \mathbf{20} \times 10^4$$
$$\mathbf{250320} := 8! + \mathbf{21} \times 10^4$$
$$\mathbf{260320} := 8! + \mathbf{22} \times 10^4$$
$$\mathbf{270320} := 8! + \mathbf{23} \times 10^4$$
$$\mathbf{280320} := 8! + \mathbf{24} \times 10^4$$
$$\mathbf{290320} := 8! + \mathbf{25} \times 10^4$$
$$\mathbf{300320} := 8! + \mathbf{26} \times 10^4$$
$$\mathbf{310320} := 8! + \mathbf{27} \times 10^4$$

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1.1.4 April-20

In the (1) consider $m = 4$ and $d = 1$ to 30, then we have the following values representing the days of **April-20**.

◊ *April - 20* ◊

$$\mathbf{010420} := 8! - \mathbf{03} \times 10^4 + 10^2$$
$$\mathbf{020420} := 8! - \mathbf{02} \times 10^4 + 10^2$$
$$\mathbf{030420} := 8! - \mathbf{01} \times 10^4 + 10^2$$
$$\mathbf{040420} := 8! + 10^2$$
$$\mathbf{050420} := 8! + \mathbf{01} \times 10^4 + 10^2$$
$$\mathbf{060420} := 8! + \mathbf{02} \times 10^4 + 10^2$$
$$\mathbf{070420} := 8! + \mathbf{03} \times 10^4 + 10^2$$
$$\mathbf{080420} := 8! + \mathbf{04} \times 10^4 + 10^2$$
$$\mathbf{090420} := 8! + \mathbf{05} \times 10^4 + 10^2$$
$$\mathbf{100420} := 8! + \mathbf{06} \times 10^4 + 10^2$$
$$\mathbf{110420} := 8! + \mathbf{07} \times 10^4 + 10^2$$
$$\mathbf{120420} := 8! + \mathbf{08} \times 10^4 + 10^2$$
$$\mathbf{130420} := 8! + \mathbf{09} \times 10^4 + 10^2$$
$$\mathbf{140420} := 8! + \mathbf{10} \times 10^4 + 10^2$$
$$\mathbf{150420} := 8! + \mathbf{11} \times 10^4 + 10^2$$
$$\mathbf{160420} := 8! + \mathbf{12} \times 10^4 + 10^2$$
$$\mathbf{170420} := 8! + \mathbf{13} \times 10^4 + 10^2$$
$$\mathbf{180420} := 8! + \mathbf{14} \times 10^4 + 10^2$$
$$\mathbf{190420} := 8! + \mathbf{15} \times 10^4 + 10^2$$
$$\mathbf{200420} := 8! + \mathbf{16} \times 10^4 + 10^2$$
$$\mathbf{210420} := 8! + \mathbf{17} \times 10^4 + 10^2$$
$$\mathbf{220420} := 8! + \mathbf{18} \times 10^4 + 10^2$$
$$\mathbf{230420} := 8! + \mathbf{19} \times 10^4 + 10^2$$
$$\mathbf{240420} := 8! + \mathbf{20} \times 10^4 + 10^2$$
$$\mathbf{250420} := 8! + \mathbf{21} \times 10^4 + 10^2$$
$$\mathbf{260420} := 8! + \mathbf{22} \times 10^4 + 10^2$$
$$\mathbf{270420} := 8! + \mathbf{23} \times 10^4 + 10^2$$
$$\mathbf{280420} := 8! + \mathbf{24} \times 10^4 + 10^2$$
$$\mathbf{290420} := 8! + \mathbf{25} \times 10^4 + 10^2$$
$$\mathbf{300420} := 8! + \mathbf{26} \times 10^4 + 10^2$$

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1.1.5 May-20

In the (1) consider $5 = 3$ and $d = 1$ to 31, then we have the following values representing the days of **May-20**.

◊ *May - 20* ◊

$$\mathbf{010520} := 8! - \mathbf{03} \times 10^4 + 2 \times 10^2$$
$$\mathbf{020520} := 8! - \mathbf{02} \times 10^4 + 2 \times 10^2$$
$$\mathbf{030520} := 8! - \mathbf{01} \times 10^4 + 2 \times 10^2$$
$$\mathbf{040520} := 8! + \mathbf{02} \times 10^2$$
$$\mathbf{050520} := 8! + \mathbf{01} \times 10^4 + 2 \times 10^2$$
$$\mathbf{060520} := 8! + \mathbf{02} \times 10^4 + 2 \times 10^2$$
$$\mathbf{070520} := 8! + \mathbf{03} \times 10^4 + 2 \times 10^2$$
$$\mathbf{080520} := 8! + \mathbf{04} \times 10^4 + 2 \times 10^2$$
$$\mathbf{090520} := 8! + \mathbf{05} \times 10^4 + 2 \times 10^2$$
$$\mathbf{100520} := 8! + \mathbf{06} \times 10^4 + 2 \times 10^2$$
$$\mathbf{110520} := 8! + \mathbf{07} \times 10^4 + 2 \times 10^2$$
$$\mathbf{120520} := 8! + \mathbf{08} \times 10^4 + 2 \times 10^2$$
$$\mathbf{130520} := 8! + \mathbf{09} \times 10^4 + 2 \times 10^2$$
$$\mathbf{140520} := 8! + \mathbf{10} \times 10^4 + 2 \times 10^2$$
$$\mathbf{150520} := 8! + \mathbf{11} \times 10^4 + 2 \times 10^2$$
$$\mathbf{160520} := 8! + \mathbf{12} \times 10^4 + 2 \times 10^2$$
$$\mathbf{170520} := 8! + \mathbf{13} \times 10^4 + 2 \times 10^2$$
$$\mathbf{180520} := 8! + \mathbf{14} \times 10^4 + 2 \times 10^2$$
$$\mathbf{190520} := 8! + \mathbf{15} \times 10^4 + 2 \times 10^2$$
$$\mathbf{200520} := 8! + \mathbf{16} \times 10^4 + 2 \times 10^2$$
$$\mathbf{210520} := 8! + \mathbf{17} \times 10^4 + 2 \times 10^2$$
$$\mathbf{220520} := 8! + \mathbf{18} \times 10^4 + 2 \times 10^2$$
$$\mathbf{230520} := 8! + \mathbf{19} \times 10^4 + 2 \times 10^2$$
$$\mathbf{240520} := 8! + \mathbf{20} \times 10^4 + 2 \times 10^2$$
$$\mathbf{250520} := 8! + \mathbf{21} \times 10^4 + 2 \times 10^2$$
$$\mathbf{260520} := 8! + \mathbf{22} \times 10^4 + 2 \times 10^2$$
$$\mathbf{270520} := 8! + \mathbf{23} \times 10^4 + 2 \times 10^2$$
$$\mathbf{280520} := 8! + \mathbf{24} \times 10^4 + 2 \times 10^2$$
$$\mathbf{290520} := 8! + \mathbf{25} \times 10^4 + 2 \times 10^2$$
$$\mathbf{300520} := 8! + \mathbf{26} \times 10^4 + 2 \times 10^2$$
$$\mathbf{310520} := 8! + \mathbf{27} \times 10^4 + 2 \times 10^2$$

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1.1.6 June-20

In the (1) consider $m = 6$ and $d = 1$ to 30, then we have the following values representing the days of **June-20**.

◊ *June - 20* ◊

$$\mathbf{010620} := 8! - \mathbf{03} \times 10^4 + 3 \times 10^2$$
$$\mathbf{020620} := 8! - \mathbf{02} \times 10^4 + 3 \times 10^2$$
$$\mathbf{030620} := 8! - \mathbf{01} \times 10^4 + 3 \times 10^2$$
$$\mathbf{040620} := 8! + \mathbf{03} \times 10^2$$
$$\mathbf{050620} := 8! + \mathbf{01} \times 10^4 + 3 \times 10^2$$
$$\mathbf{060620} := 8! + \mathbf{02} \times 10^4 + 3 \times 10^2$$
$$\mathbf{070620} := 8! + \mathbf{03} \times 10^4 + 3 \times 10^2$$
$$\mathbf{080620} := 8! + \mathbf{04} \times 10^4 + 3 \times 10^2$$
$$\mathbf{090620} := 8! + \mathbf{05} \times 10^4 + 3 \times 10^2$$
$$\mathbf{100620} := 8! + \mathbf{06} \times 10^4 + 3 \times 10^2$$
$$\mathbf{110620} := 8! + \mathbf{07} \times 10^4 + 3 \times 10^2$$
$$\mathbf{120620} := 8! + \mathbf{08} \times 10^4 + 3 \times 10^2$$
$$\mathbf{130620} := 8! + \mathbf{09} \times 10^4 + 3 \times 10^2$$
$$\mathbf{140620} := 8! + \mathbf{10} \times 10^4 + 3 \times 10^2$$
$$\mathbf{150620} := 8! + \mathbf{11} \times 10^4 + 3 \times 10^2$$
$$\mathbf{160620} := 8! + \mathbf{12} \times 10^4 + 3 \times 10^2$$
$$\mathbf{170620} := 8! + \mathbf{13} \times 10^4 + 3 \times 10^2$$
$$\mathbf{180620} := 8! + \mathbf{14} \times 10^4 + 3 \times 10^2$$
$$\mathbf{190620} := 8! + \mathbf{15} \times 10^4 + 3 \times 10^2$$
$$\mathbf{200620} := 8! + \mathbf{16} \times 10^4 + 3 \times 10^2$$
$$\mathbf{210620} := 8! + \mathbf{17} \times 10^4 + 3 \times 10^2$$
$$\mathbf{220620} := 8! + \mathbf{18} \times 10^4 + 3 \times 10^2$$
$$\mathbf{230620} := 8! + \mathbf{19} \times 10^4 + 3 \times 10^2$$
$$\mathbf{240620} := 8! + \mathbf{20} \times 10^4 + 3 \times 10^2$$
$$\mathbf{250620} := 8! + \mathbf{21} \times 10^4 + 3 \times 10^2$$
$$\mathbf{260620} := 8! + \mathbf{22} \times 10^4 + 3 \times 10^2$$
$$\mathbf{270620} := 8! + \mathbf{23} \times 10^4 + 3 \times 10^2$$
$$\mathbf{280620} := 8! + \mathbf{24} \times 10^4 + 3 \times 10^2$$
$$\mathbf{290620} := 8! + \mathbf{25} \times 10^4 + 3 \times 10^2$$
$$\mathbf{300620} := 8! + \mathbf{26} \times 10^4 + 3 \times 10^2$$

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1.1.7 July-20

In the (1) consider $m = 7$ and $d = 1$ to 31, then we have the following values representing the days of **July-20**.

♢ *July - 20* ♢

$$\mathbf{010720} := 6! + \mathbf{01} \times 10^4$$
$$\mathbf{020720} := 6! + \mathbf{02} \times 10^4$$
$$\mathbf{030720} := 6! + \mathbf{03} \times 10^4$$
$$\mathbf{040720} := 6! + \mathbf{04} \times 10^4$$
$$\mathbf{050720} := 6! + \mathbf{05} \times 10^4$$
$$\mathbf{060720} := 6! + \mathbf{06} \times 10^4$$
$$\mathbf{070720} := 6! + \mathbf{07} \times 10^4$$
$$\mathbf{080720} := 6! + \mathbf{08} \times 10^4$$
$$\mathbf{090720} := 6! + \mathbf{09} \times 10^4$$
$$\mathbf{100720} := 6! + \mathbf{10} \times 10^4$$
$$\mathbf{110720} := 6! + \mathbf{11} \times 10^4$$
$$\mathbf{120720} := 6! + \mathbf{12} \times 10^4$$
$$\mathbf{130720} := 6! + \mathbf{13} \times 10^4$$
$$\mathbf{140720} := 6! + \mathbf{14} \times 10^4$$
$$\mathbf{150720} := 6! + \mathbf{15} \times 10^4$$
$$\mathbf{160720} := 6! + \mathbf{16} \times 10^4$$
$$\mathbf{170720} := 6! + \mathbf{17} \times 10^4$$
$$\mathbf{180720} := 6! + \mathbf{18} \times 10^4$$
$$\mathbf{190720} := 6! + \mathbf{19} \times 10^4$$
$$\mathbf{200720} := 6! + \mathbf{20} \times 10^4$$
$$\mathbf{210720} := 6! + \mathbf{21} \times 10^4$$
$$\mathbf{220720} := 6! + \mathbf{22} \times 10^4$$
$$\mathbf{230720} := 6! + \mathbf{23} \times 10^4$$
$$\mathbf{240720} := 6! + \mathbf{24} \times 10^4$$
$$\mathbf{250720} := 6! + \mathbf{25} \times 10^4$$
$$\mathbf{260720} := 6! + \mathbf{26} \times 10^4$$
$$\mathbf{270720} := 6! + \mathbf{27} \times 10^4$$
$$\mathbf{280720} := 6! + \mathbf{28} \times 10^4$$
$$\mathbf{290720} := 6! + \mathbf{29} \times 10^4$$
$$\mathbf{300720} := 6! + \mathbf{30} \times 10^4$$
$$\mathbf{310720} := 6! + \mathbf{31} \times 10^4$$

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1.1.8 August-20

In the (1) consider $m = 8$ and $d = 1$ to 31, then we have the following values representing the days of **August-20**.

◊ *August - 20* ◊

$$\mathbf{010820} := 6! + \mathbf{01} \times 10^4 + 10^2$$
$$\mathbf{020820} := 6! + \mathbf{02} \times 10^4 + 10^2$$
$$\mathbf{030820} := 6! + \mathbf{03} \times 10^4 + 10^2$$
$$\mathbf{040820} := 6! + \mathbf{04} \times 10^4 + 10^2$$
$$\mathbf{050820} := 6! + \mathbf{05} \times 10^4 + 10^2$$
$$\mathbf{060820} := 6! + \mathbf{06} \times 10^4 + 10^2$$
$$\mathbf{070820} := 6! + \mathbf{07} \times 10^4 + 10^2$$
$$\mathbf{080820} := 6! + \mathbf{08} \times 10^4 + 10^2$$
$$\mathbf{090820} := 6! + \mathbf{09} \times 10^4 + 10^2$$
$$\mathbf{100820} := 6! + \mathbf{10} \times 10^4 + 10^2$$
$$\mathbf{110820} := 6! + \mathbf{11} \times 10^4 + 10^2$$
$$\mathbf{120820} := 6! + \mathbf{12} \times 10^4 + 10^2$$
$$\mathbf{130820} := 6! + \mathbf{13} \times 10^4 + 10^2$$
$$\mathbf{140820} := 6! + \mathbf{14} \times 10^4 + 10^2$$
$$\mathbf{150820} := 6! + \mathbf{15} \times 10^4 + 10^2$$
$$\mathbf{160820} := 6! + \mathbf{16} \times 10^4 + 10^2$$
$$\mathbf{170820} := 6! + \mathbf{17} \times 10^4 + 10^2$$
$$\mathbf{180820} := 6! + \mathbf{18} \times 10^4 + 10^2$$
$$\mathbf{190820} := 6! + \mathbf{19} \times 10^4 + 10^2$$
$$\mathbf{200820} := 6! + \mathbf{20} \times 10^4 + 10^2$$
$$\mathbf{217070} := 6! + \mathbf{21} \times 10^4 + 10^2$$
$$\mathbf{220820} := 6! + \mathbf{22} \times 10^4 + 10^2$$
$$\mathbf{230820} := 6! + \mathbf{23} \times 10^4 + 10^2$$
$$\mathbf{240820} := 6! + \mathbf{24} \times 10^4 + 10^2$$
$$\mathbf{250820} := 6! + \mathbf{25} \times 10^4 + 10^2$$
$$\mathbf{260820} := 6! + \mathbf{26} \times 10^4 + 10^2$$
$$\mathbf{270820} := 6! + \mathbf{27} \times 10^4 + 10^2$$
$$\mathbf{280820} := 6! + \mathbf{28} \times 10^4 + 10^2$$
$$\mathbf{290820} := 6! + \mathbf{29} \times 10^4 + 10^2$$
$$\mathbf{300820} := 6! + \mathbf{30} \times 10^4 + 10^2$$
$$\mathbf{310820} := 6! + \mathbf{31} \times 10^4 + 10^2$$

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1.1.9 September-20

In the (1) consider $m = 9$ and $d = 1$ to 30, then we have the following values representing the days of **September-20**.

◊ *September - 20* ◊

$$\mathbf{010920} := 6! + \mathbf{01} \times 10^4 + 2 \times 10^2$$
$$\mathbf{020920} := 6! + \mathbf{02} \times 10^4 + 2 \times 10^2$$
$$\mathbf{030920} := 6! + \mathbf{03} \times 10^4 + 2 \times 10^2$$
$$\mathbf{040920} := 6! + \mathbf{04} \times 10^4 + 2 \times 10^2$$
$$\mathbf{050920} := 6! + \mathbf{05} \times 10^4 + 2 \times 10^2$$
$$\mathbf{060920} := 6! + \mathbf{06} \times 10^4 + 2 \times 10^2$$
$$\mathbf{070920} := 6! + \mathbf{07} \times 10^4 + 2 \times 10^2$$
$$\mathbf{080920} := 6! + \mathbf{08} \times 10^4 + 2 \times 10^2$$
$$\mathbf{090920} := 6! + \mathbf{09} \times 10^4 + 2 \times 10^2$$
$$\mathbf{100920} := 6! + \mathbf{10} \times 10^4 + 2 \times 10^2$$
$$\mathbf{110920} := 6! + \mathbf{11} \times 10^4 + 2 \times 10^2$$
$$\mathbf{120920} := 6! + \mathbf{12} \times 10^4 + 2 \times 10^2$$
$$\mathbf{130920} := 6! + \mathbf{13} \times 10^4 + 2 \times 10^2$$
$$\mathbf{140920} := 6! + \mathbf{14} \times 10^4 + 2 \times 10^2$$
$$\mathbf{150920} := 6! + \mathbf{15} \times 10^4 + 2 \times 10^2$$
$$\mathbf{160920} := 6! + \mathbf{16} \times 10^4 + 2 \times 10^2$$
$$\mathbf{170920} := 6! + \mathbf{17} \times 10^4 + 2 \times 10^2$$
$$\mathbf{180920} := 6! + \mathbf{18} \times 10^4 + 2 \times 10^2$$
$$\mathbf{190920} := 6! + \mathbf{19} \times 10^4 + 2 \times 10^2$$
$$\mathbf{200920} := 6! + \mathbf{20} \times 10^4 + 2 \times 10^2$$
$$\mathbf{210920} := 6! + \mathbf{21} \times 10^4 + 2 \times 10^2$$
$$\mathbf{220920} := 6! + \mathbf{22} \times 10^4 + 2 \times 10^2$$
$$\mathbf{230920} := 6! + \mathbf{23} \times 10^4 + 2 \times 10^2$$
$$\mathbf{240920} := 6! + \mathbf{24} \times 10^4 + 2 \times 10^2$$
$$\mathbf{250920} := 6! + \mathbf{25} \times 10^4 + 2 \times 10^2$$
$$\mathbf{260920} := 6! + \mathbf{26} \times 10^4 + 2 \times 10^2$$
$$\mathbf{270920} := 6! + \mathbf{27} \times 10^4 + 2 \times 10^2$$
$$\mathbf{280920} := 6! + \mathbf{28} \times 10^4 + 2 \times 10^2$$
$$\mathbf{290920} := 6! + \mathbf{29} \times 10^4 + 2 \times 10^2$$
$$\mathbf{300920} := 6! + \mathbf{30} \times 10^4 + 2 \times 10^2$$

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1.1.10 October-20

In the (1) consider $m = 10$ and $d = 1$ to 31, then we have the following values representing the days of **October-20**.

◊ *October - 20* ◊

$$\mathbf{011020} := 6! + \mathbf{01} \times 10^4 + 3 \times 10^2$$
$$\mathbf{021020} := 6! + \mathbf{02} \times 10^4 + 3 \times 10^2$$
$$\mathbf{031020} := 6! + \mathbf{03} \times 10^4 + 3 \times 10^2$$
$$\mathbf{041020} := 6! + \mathbf{04} \times 10^4 + 3 \times 10^2$$
$$\mathbf{051020} := 6! + \mathbf{05} \times 10^4 + 3 \times 10^2$$
$$\mathbf{061020} := 6! + \mathbf{06} \times 10^4 + 3 \times 10^2$$
$$\mathbf{071020} := 6! + \mathbf{07} \times 10^4 + 3 \times 10^2$$
$$\mathbf{081020} := 6! + \mathbf{08} \times 10^4 + 3 \times 10^2$$
$$\mathbf{091020} := 6! + \mathbf{09} \times 10^4 + 3 \times 10^2$$
$$\mathbf{101020} := 6! + \mathbf{10} \times 10^4 + 3 \times 10^2$$
$$\mathbf{111020} := 6! + \mathbf{11} \times 10^4 + 3 \times 10^2$$
$$\mathbf{121020} := 6! + \mathbf{12} \times 10^4 + 3 \times 10^2$$
$$\mathbf{131020} := 6! + \mathbf{13} \times 10^4 + 3 \times 10^2$$
$$\mathbf{141020} := 6! + \mathbf{14} \times 10^4 + 3 \times 10^2$$
$$\mathbf{151020} := 6! + \mathbf{15} \times 10^4 + 3 \times 10^2$$
$$\mathbf{161020} := 6! + \mathbf{16} \times 10^4 + 3 \times 10^2$$
$$\mathbf{171020} := 6! + \mathbf{17} \times 10^4 + 3 \times 10^2$$
$$\mathbf{181020} := 6! + \mathbf{18} \times 10^4 + 3 \times 10^2$$
$$\mathbf{191020} := 6! + \mathbf{19} \times 10^4 + 3 \times 10^2$$
$$\mathbf{201020} := 6! + \mathbf{20} \times 10^4 + 3 \times 10^2$$
$$\mathbf{211020} := 6! + \mathbf{21} \times 10^4 + 3 \times 10^2$$
$$\mathbf{221020} := 6! + \mathbf{22} \times 10^4 + 3 \times 10^2$$
$$\mathbf{231020} := 6! + \mathbf{23} \times 10^4 + 3 \times 10^2$$
$$\mathbf{241020} := 6! + \mathbf{24} \times 10^4 + 3 \times 10^2$$
$$\mathbf{251020} := 6! + \mathbf{25} \times 10^4 + 3 \times 10^2$$
$$\mathbf{261020} := 6! + \mathbf{26} \times 10^4 + 3 \times 10^2$$
$$\mathbf{271020} := 6! + \mathbf{27} \times 10^4 + 3 \times 10^2$$
$$\mathbf{281020} := 6! + \mathbf{28} \times 10^4 + 3 \times 10^2$$
$$\mathbf{291020} := 6! + \mathbf{29} \times 10^4 + 3 \times 10^2$$
$$\mathbf{301020} := 6! + \mathbf{30} \times 10^4 + 3 \times 10^2$$
$$\mathbf{311020} := 6! + \mathbf{31} \times 10^4 + 3 \times 10^2$$

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1.1.11 November-20

In the (1) consider $m = 11$ and $d = 1$ to 30, then we have the following values representing the days of **November-20**.

◊ *November - 20* ◊

$$\mathbf{011120} := 6! + \mathbf{01} \times 10^4 + 4 \times 10^2$$
$$\mathbf{021120} := 6! + \mathbf{02} \times 10^4 + 4 \times 10^2$$
$$\mathbf{031120} := 6! + \mathbf{03} \times 10^4 + 4 \times 10^2$$
$$\mathbf{041120} := 6! + \mathbf{04} \times 10^4 + 4 \times 10^2$$
$$\mathbf{051120} := 6! + \mathbf{05} \times 10^4 + 4 \times 10^2$$
$$\mathbf{061120} := 6! + \mathbf{06} \times 10^4 + 4 \times 10^2$$
$$\mathbf{071120} := 6! + \mathbf{07} \times 10^4 + 4 \times 10^2$$
$$\mathbf{081120} := 6! + \mathbf{08} \times 10^4 + 4 \times 10^2$$
$$\mathbf{091120} := 6! + \mathbf{09} \times 10^4 + 4 \times 10^2$$
$$\mathbf{101120} := 6! + \mathbf{10} \times 10^4 + 4 \times 10^2$$
$$\mathbf{111120} := 6! + \mathbf{11} \times 10^4 + 4 \times 10^2$$
$$\mathbf{121120} := 6! + \mathbf{12} \times 10^4 + 4 \times 10^2$$
$$\mathbf{131120} := 6! + \mathbf{13} \times 10^4 + 4 \times 10^2$$
$$\mathbf{141120} := 6! + \mathbf{14} \times 10^4 + 4 \times 10^2$$
$$\mathbf{151120} := 6! + \mathbf{15} \times 10^4 + 4 \times 10^2$$
$$\mathbf{161120} := 6! + \mathbf{16} \times 10^4 + 4 \times 10^2$$
$$\mathbf{171120} := 6! + \mathbf{17} \times 10^4 + 4 \times 10^2$$
$$\mathbf{181120} := 6! + \mathbf{18} \times 10^4 + 4 \times 10^2$$
$$\mathbf{191120} := 6! + \mathbf{19} \times 10^4 + 4 \times 10^2$$
$$\mathbf{201120} := 6! + \mathbf{20} \times 10^4 + 4 \times 10^2$$
$$\mathbf{211120} := 6! + \mathbf{21} \times 10^4 + 4 \times 10^2$$
$$\mathbf{221120} := 6! + \mathbf{22} \times 10^4 + 4 \times 10^2$$
$$\mathbf{231120} := 6! + \mathbf{23} \times 10^4 + 4 \times 10^2$$
$$\mathbf{241120} := 6! + \mathbf{24} \times 10^4 + 4 \times 10^2$$
$$\mathbf{251120} := 6! + \mathbf{25} \times 10^4 + 4 \times 10^2$$
$$\mathbf{261120} := 6! + \mathbf{26} \times 10^4 + 4 \times 10^2$$
$$\mathbf{271120} := 6! + \mathbf{27} \times 10^4 + 4 \times 10^2$$
$$\mathbf{281120} := 6! + \mathbf{28} \times 10^4 + 4 \times 10^2$$
$$\mathbf{291120} := 6! + \mathbf{29} \times 10^4 + 4 \times 10^2$$
$$\mathbf{301120} := 6! + \mathbf{30} \times 10^4 + 4 \times 10^2$$

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1.1.12 December-20

In the (1) consider $m = 12$ and $d = 1$ to 31, then we have the following values representing the days of **December-20**.

◊ *December - 20* ◊

$$\mathbf{011220} := 6! + \mathbf{01} \times 10^4 + 5 \times 10^2$$
$$\mathbf{021220} := 6! + \mathbf{02} \times 10^4 + 5 \times 10^2$$
$$\mathbf{031220} := 6! + \mathbf{03} \times 10^4 + 5 \times 10^2$$
$$\mathbf{041220} := 6! + \mathbf{04} \times 10^4 + 5 \times 10^2$$
$$\mathbf{051220} := 6! + \mathbf{05} \times 10^4 + 5 \times 10^2$$
$$\mathbf{061220} := 6! + \mathbf{06} \times 10^4 + 5 \times 10^2$$
$$\mathbf{071220} := 6! + \mathbf{07} \times 10^4 + 5 \times 10^2$$
$$\mathbf{081220} := 6! + \mathbf{08} \times 10^4 + 5 \times 10^2$$
$$\mathbf{091220} := 6! + \mathbf{09} \times 10^4 + 5 \times 10^2$$
$$\mathbf{101220} := 6! + \mathbf{10} \times 10^4 + 5 \times 10^2$$
$$\mathbf{111220} := 6! + \mathbf{11} \times 10^4 + 5 \times 10^2$$
$$\mathbf{121220} := 6! + \mathbf{12} \times 10^4 + 5 \times 10^2$$
$$\mathbf{131220} := 6! + \mathbf{13} \times 10^4 + 5 \times 10^2$$
$$\mathbf{141220} := 6! + \mathbf{14} \times 10^4 + 5 \times 10^2$$
$$\mathbf{151220} := 6! + \mathbf{15} \times 10^4 + 5 \times 10^2$$
$$\mathbf{161220} := 6! + \mathbf{16} \times 10^4 + 5 \times 10^2$$
$$\mathbf{171220} := 6! + \mathbf{17} \times 10^4 + 5 \times 10^2$$
$$\mathbf{181220} := 6! + \mathbf{18} \times 10^4 + 5 \times 10^2$$
$$\mathbf{191220} := 6! + \mathbf{19} \times 10^4 + 5 \times 10^2$$
$$\mathbf{201220} := 6! + \mathbf{20} \times 10^4 + 5 \times 10^2$$
$$\mathbf{211220} := 6! + \mathbf{21} \times 10^4 + 5 \times 10^2$$
$$\mathbf{221220} := 6! + \mathbf{22} \times 10^4 + 5 \times 10^2$$
$$\mathbf{231220} := 6! + \mathbf{23} \times 10^4 + 5 \times 10^2$$
$$\mathbf{241220} := 6! + \mathbf{24} \times 10^4 + 5 \times 10^2$$
$$\mathbf{251220} := 6! + \mathbf{25} \times 10^4 + 5 \times 10^2$$
$$\mathbf{261220} := 6! + \mathbf{26} \times 10^4 + 5 \times 10^2$$
$$\mathbf{271220} := 6! + \mathbf{27} \times 10^4 + 5 \times 10^2$$
$$\mathbf{281220} := 6! + \mathbf{28} \times 10^4 + 5 \times 10^2$$
$$\mathbf{291220} := 6! + \mathbf{29} \times 10^4 + 5 \times 10^2$$
$$\mathbf{301220} := 6! + \mathbf{30} \times 10^4 + 5 \times 10^2$$
$$\mathbf{311220} := 6! + \mathbf{31} \times 10^4 + 5 \times 10^2$$

2 Year-Wise Numerical Representations

The previous section give the results and functions only for the year ending in 20 instead of 2020. This section brings representations in terms of **day**, **month** and **year**. See below the three general functions based on the 5!, 8! and 6!. Below are some examples of functions written with 5!, 8! and 6!, with variables for **day**, **month** and **year**.

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Let's consider the following three functions:

$$F(d,m,x) := 5! \times 10^2 + d \times 10^6 + (m-1) \times 10^4 + x \tag{6}$$
$$G(d,m,x) := 8! \times 10^2 + (d-4) \times 10^6 + (m-3) \times 10^4 + x \tag{7}$$
$$H(d,m,x) := 6! \times 10^2 + d \times 10^6 + (m-7) \times 10^4 + x \tag{8}$$

where **d**, **m** and **y** with **y=2000+x** represents the **day**, **month** and **year** respectively.

Simplifying the above three functions, we get a single function:

$$K(d,m,y) = d \times 10^6 + m \times 10^4 + y \tag{9}$$

where **d**, **m** and **y** represents the **day**, **month** and **year** respectively.

Remark 2.1. *The function* (9) *is in terms of* ***powers of 10****, while the functions* (6), (7) *and* (8) *are* ***factorial-type*** *representations. The function* (9) *is always known in the literature, while the functions* (6), (7) *and* (8) *are new in the literature.*

Below are some examples of the functions (6), (7) and (8).

Example 2.1. *Let's suppose, we want to write March 18, 2020, i.e., 18.03.2020. In this case,* $d = 18$, $m = 03$ *and* $x = 2020 - 2000 = 20$. *According to* (6), (7) *and* (8), *we have*

$$F(18,03,20) := 5! \times 10^2 + 18 \times 10^6 + (03-1) \times 10^4 + 20$$
$$G(18,03,20) := 8! \times 10^2 + (18-4) \times 10^6 + (03-3) \times 10^4 + 20$$
$$H(18,03,20) := 6! \times 10^2 + 18 \times 10^6 + (03-7) \times 10^4 + 20$$

After simplifications, we have

$$F(18,03,20) := 5! \times 10^2 + 18 \times 10^6 + 2 \times 10^4 + 20 = 18032020, \textit{ i.e., } 18.03.2020$$
$$G(18,03,20) := 8! \times 10^2 + 14 \times 10^6 + 20 = 18032020, \textit{ i.e., } 18.03.2020$$
$$H(18,03,20) := 6! \times 10^2 + 18 \times 10^6 - 4 \times 10^4 + 20 = 18032020, \textit{ i.e., } 18.03.2020$$

Equivalently, as a power of 10, we have

$$18032020 := 18 \times 10^6 + 03 \times 10^4 + 2 \times 10^3 + 20.$$

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Example 2.2. *Let's suppose, we want to write December 03, 2023, i.e., 03.12.2023. In this case,* $d = 03$, $m = 12$ *and* $x = 2023 - 2000 = 23$. *According to* (6), (7) *and* (8), *we have*

$$\begin{aligned} F(03,12,23) &:= 5! \times 10^2 + 03 \times 10^6 + (12-1) \times 10^4 + 23 \\ G(03,12,23) &:= 8! \times 10^2 + (03-4) \times 10^6 + (12-3) \times 10^4 + 23 \\ H(03,12,23) &:= 6! \times 10^2 + 03 \times 10^6 + (12-7) \times 10^4 + 23 \end{aligned}$$

After simplifications, we have

$$\begin{aligned} F(03,12,23) &:= 5! \times 10^2 + 3 \times 10^6 + 11 \times 10^4 + 23 = 03122023, \textit{ i.e., } 03.12.2023 \\ G(03,12,23) &:= 8! \times 10^2 - 1 \times 10^6 + 09 \times 10^4 + 23 = 03122023, \textit{ i.e., } 03.12.2023 \\ H(03,12,23) &:= 6! \times 10^2 + 3 \times 10^6 + 05 \times 10^4 + 23 = 03122023, \textit{ i.e., } 03.12.2023 \end{aligned}$$

Equivalently, as a power of 10, we have

$$03122023 := 03 \times 10^6 + 12 \times 10^4 + 2 \times 10^3 + 23.$$

Example 2.3. *Let's suppose, we want to write September 9, 2999, i.e., 09.09.2999. In this case,* $d = 09$, $m = 09$ *and* $x = 2999 - 2000 = 999$. *According to* (6), (7) *and* (8), *we have*

$$\begin{aligned} F(09,09,999) &:= 5! \times 10^2 + 09 \times 10^6 + (09-1) \times 10^4 + 999 \\ G(09,09,999) &:= 8! \times 10^2 + (09-4) \times 10^6 + (09-3) \times 10^4 + 999 \\ H(09,09,999) &:= 6! \times 10^2 + 09 \times 10^6 + (09-7) \times 10^4 + 999 \end{aligned}$$

After simplifications, we have

$$\begin{aligned} F(09,09,999) &:= 5! \times 10^2 + 9 \times 10^6 + 8 \times 10^4 + 999 = 09092999, \textit{ i.e., } 09.09.2999 \\ G(09,09,999) &:= 8! \times 10^2 + 5 \times 10^6 + 6 \times 10^4 + 999 = 09092999, \textit{ i.e., } 09.09.2999 \\ H(09,09,999) &:= 6! \times 10^2 + 9 \times 10^6 + 2 \times 10^4 + 999 = 09092999, \textit{ i.e., } 09.09.2999 \end{aligned}$$

The above three Examples 2.1, 2.2 and 2.3 are for years bigger than or equal to 2000, where year is represented by $y = x + 2000$. In order to write example for the year less than 2000, we shall use the same definition of y, i.e., $y = x + 2000$. See below some examples.

Example 2.4. *Let's suppose, we want to write November 11, 1234, i.e., 11.11.1234. In this case,* $d = 11$, $m = 11$ *and* $x = 1234 - 2000 = -766$. *According to* (6), (7) *and* (8), *we have*

$$\begin{aligned} F(11,11,-766) &:= 5! \times 10^2 + 11 \times 10^6 + (11-1) \times 10^4 - 766 \\ G(11,11,-766) &:= 8! \times 10^2 + (11-4) \times 10^6 + (11-3) \times 10^4 - 766 \\ H(11,11,-766) &:= 6! \times 10^2 + 11 \times 10^6 + (11-7) \times 10^4 - 766 \end{aligned}$$

After simplifications, we have

$$\begin{aligned} F(11,11,-766) &:= 5! \times 10^2 + 11 \times 10^6 + 10 \times 10^4 - 766 = 11111234, \textit{ i.e., } 11.11.1234 \\ G(11,11,-766) &:= 8! \times 10^2 + 07 \times 10^6 + 08 \times 10^4 - 766 = 11111234, \textit{ i.e., } 11.11.1234 \\ H(11,11,-766) &:= 6! \times 10^2 + 11 \times 10^6 + 04 \times 10^4 - 766 = 11111234, \textit{ i.e., } 11.11.1234 \end{aligned}$$

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Example 2.5. *Let's suppose, we want to write September 03, 688, i.e., 03.09.688. In this case,* $d = 03$, $m = 09$ *and* $x = 688 - 2000 = -1312$. *According to* (6), (7) *and* (8), *we have*

$$\begin{aligned} F(03,09,-1312) &:= 5! \times 10^2 + 03 \times 10^6 \quad + (09-1) \times 10^4 - 1312 \\ G(03,09,-1312) &:= 8! \times 10^2 + (03-4) \times 10^6 + (09-3) \times 10^4 - 1312 \\ H(03,09,-1312) &:= 6! \times 10^2 + 03 \times 10^6 \quad + (09-7) \times 10^4 - 1312 \end{aligned}$$

After simplifications, we have

$$\begin{aligned} F(03,09,-1312) &:= 5! \times 10^2 + 3 \times 10^6 + 8 \times 10^4 - 1312 \quad = 03090688, \textit{ i.e., } 03.09.0688 \\ G03,09,-1312) &:= 8! \times 10^2 - 1 \times 10^6 + 6 \times 10^4 - 1312 \quad = 03090688, \textit{ i.e., } 03.09.0688 \\ H(03,09,-1312) &:= 6! \times 10^2 + 3 \times 10^6 + 2 \times 10^4 - 1312 \quad = 03090688, \textit{ i.e., } 03.09.0688 \end{aligned}$$

Remark 2.2. *Analysing the Examples 2.1-2.5, we observe that the functions given in* (6), (7) *and* (8) *are valid for any year independent of bigger or less than 2000.*

The subsection below give the month-wise details for the year 2020.

2.1 Month-Wise Representations of Year 2020

According to functions given in (6), (7) and (8), let's observe the following examples.

$$\begin{aligned} \mathbf{1012020} &:= 5! \times 10^2 + 10^6 + 20 \\ \mathbf{5032020} &:= 8! \times 10^2 + 10^6 + 20 \\ \mathbf{1072020} &:= 6! \times 10^2 + 10^6 + 20 \end{aligned} \tag{10}$$

From these three dates given in (10), we observer that it is good to write the months **January** and **February** using the function (7). Write the months **March** to **June** using the function (8), and write the months **July** to **December** using the function (9). As we know that $y = x + 2000$, then for the year 2020, we have $x = y - 2000 = 2020 - 2000 = 20$. Throughout this section it is understood that $x = 20$.

2.1.1 January-2020

In expression (6), let's consider $d = 1$ to $d = 31$, $m = 1$ and $x = 20$, we get the following numerical representations for the month **January-2020**.

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♢ *January - 2020* ♢

$$\mathbf{01012020} := 5! \times 10^2 + \mathbf{01} \times 10^6 + 20$$
$$\mathbf{02012020} := 5! \times 10^2 + \mathbf{02} \times 10^6 + 20$$
$$\mathbf{03012020} := 5! \times 10^2 + \mathbf{03} \times 10^6 + 20$$
$$\mathbf{04012020} := 5! \times 10^2 + \mathbf{04} \times 10^6 + 20$$
$$\mathbf{05012020} := 5! \times 10^2 + \mathbf{05} \times 10^6 + 20$$
$$\mathbf{06012020} := 5! \times 10^2 + \mathbf{06} \times 10^6 + 20$$
$$\mathbf{07012020} := 5! \times 10^2 + \mathbf{07} \times 10^6 + 20$$
$$\mathbf{08012020} := 5! \times 10^2 + \mathbf{08} \times 10^6 + 20$$
$$\mathbf{09012020} := 5! \times 10^2 + \mathbf{09} \times 10^6 + 20$$
$$\mathbf{10012020} := 5! \times 10^2 + \mathbf{10} \times 10^6 + 20$$
$$\mathbf{11012020} := 5! \times 10^2 + \mathbf{11} \times 10^6 + 20$$
$$\mathbf{12012020} := 5! \times 10^2 + \mathbf{12} \times 10^6 + 20$$
$$\mathbf{13012020} := 5! \times 10^2 + \mathbf{13} \times 10^6 + 20$$
$$\mathbf{14012020} := 5! \times 10^2 + \mathbf{14} \times 10^6 + 20$$
$$\mathbf{15012020} := 5! \times 10^2 + \mathbf{15} \times 10^6 + 20$$
$$\mathbf{16012020} := 5! \times 10^2 + \mathbf{16} \times 10^6 + 20$$
$$\mathbf{17012020} := 5! \times 10^2 + \mathbf{17} \times 10^6 + 20$$
$$\mathbf{18012020} := 5! \times 10^2 + \mathbf{18} \times 10^6 + 20$$
$$\mathbf{19012020} := 5! \times 10^2 + \mathbf{19} \times 10^6 + 20$$
$$\mathbf{20012020} := 5! \times 10^2 + \mathbf{20} \times 10^6 + 20$$
$$\mathbf{21012020} := 5! \times 10^2 + \mathbf{21} \times 10^6 + 20$$
$$\mathbf{22012020} := 5! \times 10^2 + \mathbf{22} \times 10^6 + 20$$
$$\mathbf{23012020} := 5! \times 10^2 + \mathbf{23} \times 10^6 + 20$$
$$\mathbf{24012020} := 5! \times 10^2 + \mathbf{24} \times 10^6 + 20$$
$$\mathbf{25012020} := 5! \times 10^2 + \mathbf{25} \times 10^6 + 20$$
$$\mathbf{26012020} := 5! \times 10^2 + \mathbf{26} \times 10^6 + 20$$
$$\mathbf{27012020} := 5! \times 10^2 + \mathbf{27} \times 10^6 + 20$$
$$\mathbf{28012020} := 5! \times 10^2 + \mathbf{28} \times 10^6 + 20$$
$$\mathbf{29012020} := 5! \times 10^2 + \mathbf{29} \times 10^6 + 20$$
$$\mathbf{30012020} := 5! \times 10^2 + \mathbf{30} \times 10^6 + 20$$
$$\mathbf{31012020} := 5! \times 10^2 + \mathbf{31} \times 10^6 + 20$$

2.1.2 February-2020

In expression (6), let's consider $d = 1$ to $d = 29$, $m = 2$ and $x = 20$, we get the following numerical representations for the month **February-2020**.

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◊ *February - 2020* ◊

$$\mathbf{01022020} := 5! \times 10^2 + \mathbf{01} \times 10^6 + 10^4 + 20$$
$$\mathbf{02022020} := 5! \times 10^2 + \mathbf{02} \times 10^6 + 10^4 + 20$$
$$\mathbf{03022020} := 5! \times 10^2 + \mathbf{03} \times 10^6 + 10^4 + 20$$
$$\mathbf{04022020} := 5! \times 10^2 + \mathbf{04} \times 10^6 + 10^4 + 20$$
$$\mathbf{05022020} := 5! \times 10^2 + \mathbf{05} \times 10^6 + 10^4 + 20$$
$$\mathbf{06022020} := 5! \times 10^2 + \mathbf{06} \times 10^6 + 10^4 + 20$$
$$\mathbf{07022020} := 5! \times 10^2 + \mathbf{07} \times 10^6 + 10^4 + 20$$
$$\mathbf{08022020} := 5! \times 10^2 + \mathbf{08} \times 10^6 + 10^4 + 20$$
$$\mathbf{09022020} := 5! \times 10^2 + \mathbf{09} \times 10^6 + 10^4 + 20$$
$$\mathbf{10022020} := 5! \times 10^2 + \mathbf{10} \times 10^6 + 10^4 + 20$$
$$\mathbf{11022020} := 5! \times 10^2 + \mathbf{11} \times 10^6 + 10^4 + 20$$
$$\mathbf{12022020} := 5! \times 10^2 + \mathbf{12} \times 10^6 + 10^4 + 20$$
$$\mathbf{13022020} := 5! \times 10^2 + \mathbf{13} \times 10^6 + 10^4 + 20$$
$$\mathbf{14022020} := 5! \times 10^2 + \mathbf{14} \times 10^6 + 10^4 + 20$$
$$\mathbf{15022020} := 5! \times 10^2 + \mathbf{15} \times 10^6 + 10^4 + 20$$
$$\mathbf{16022020} := 5! \times 10^2 + \mathbf{16} \times 10^6 + 10^4 + 20$$
$$\mathbf{17022020} := 5! \times 10^2 + \mathbf{17} \times 10^6 + 10^4 + 20$$
$$\mathbf{18022020} := 5! \times 10^2 + \mathbf{18} \times 10^6 + 10^4 + 20$$
$$\mathbf{19022020} := 5! \times 10^2 + \mathbf{19} \times 10^6 + 10^4 + 20$$
$$\mathbf{20022020} := 5! \times 10^2 + \mathbf{20} \times 10^6 + 10^4 + 20$$
$$\mathbf{21022020} := 5! \times 10^2 + \mathbf{21} \times 10^6 + 10^4 + 20$$
$$\mathbf{22022020} := 5! \times 10^2 + \mathbf{22} \times 10^6 + 10^4 + 20$$
$$\mathbf{23022020} := 5! \times 10^2 + \mathbf{23} \times 10^6 + 10^4 + 20$$
$$\mathbf{24022020} := 5! \times 10^2 + \mathbf{24} \times 10^6 + 10^4 + 20$$
$$\mathbf{25022020} := 5! \times 10^2 + \mathbf{25} \times 10^6 + 10^4 + 20$$
$$\mathbf{26022020} := 5! \times 10^2 + \mathbf{26} \times 10^6 + 10^4 + 20$$
$$\mathbf{27022020} := 5! \times 10^2 + \mathbf{27} \times 10^6 + 10^4 + 20$$
$$\mathbf{28022020} := 5! \times 10^2 + \mathbf{28} \times 10^6 + 10^4 + 20$$
$$\mathbf{29022020} := 5! \times 10^2 + \mathbf{29} \times 10^6 + 10^4 + 20$$

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2.1.3 March-2020

In expression (7), let's consider $d = 1$ to $d = 31$, $m = 3$ and $x = 20$, we get the following representations for the month **March-2020**.

◊ *March - 2020* ◊

$$\mathbf{01032020} := 8! \times 10^2 - \mathbf{03} \times 10^6 + 20$$
$$\mathbf{02032020} := 8! \times 10^2 - \mathbf{02} \times 10^6 + 20$$
$$\mathbf{03032020} := 8! \times 10^2 - \mathbf{01} \times 10^6 + 20$$
$$\mathbf{04032020} := 8! \times 10^2 + \mathbf{00} \times 10^6 + 20$$
$$\mathbf{05032020} := 8! \times 10^2 + \mathbf{01} \times 10^6 + 20$$
$$\mathbf{06032020} := 8! \times 10^2 + \mathbf{02} \times 10^6 + 20$$
$$\mathbf{07032020} := 8! \times 10^2 + \mathbf{03} \times 10^6 + 20$$
$$\mathbf{08032020} := 8! \times 10^2 + \mathbf{04} \times 10^6 + 20$$
$$\mathbf{09032020} := 8! \times 10^2 + \mathbf{05} \times 10^6 + 20$$
$$\mathbf{10032020} := 8! \times 10^2 + \mathbf{06} \times 10^6 + 20$$
$$\mathbf{11032020} := 8! \times 10^2 + \mathbf{07} \times 10^6 + 20$$
$$\mathbf{12032020} := 8! \times 10^2 + \mathbf{08} \times 10^6 + 20$$
$$\mathbf{13032020} := 8! \times 10^2 + \mathbf{09} \times 10^6 + 20$$
$$\mathbf{14032020} := 8! \times 10^2 + \mathbf{10} \times 10^6 + 20$$
$$\mathbf{15032020} := 8! \times 10^2 + \mathbf{11} \times 10^6 + 20$$
$$\mathbf{16032020} := 8! \times 10^2 + \mathbf{12} \times 10^6 + 20$$
$$\mathbf{17032020} := 8! \times 10^2 + \mathbf{13} \times 10^6 + 20$$
$$\mathbf{18032020} := 8! \times 10^2 + \mathbf{14} \times 10^6 + 20$$
$$\mathbf{19032020} := 8! \times 10^2 + \mathbf{15} \times 10^6 + 20$$
$$\mathbf{20032020} := 8! \times 10^2 + \mathbf{16} \times 10^6 + 20$$
$$\mathbf{21032020} := 8! \times 10^2 + \mathbf{17} \times 10^6 + 20$$
$$\mathbf{22032020} := 8! \times 10^2 + \mathbf{18} \times 10^6 + 20$$
$$\mathbf{23032020} := 8! \times 10^2 + \mathbf{19} \times 10^6 + 20$$
$$\mathbf{24032020} := 8! \times 10^2 + \mathbf{20} \times 10^6 + 20$$
$$\mathbf{25032020} := 8! \times 10^2 + \mathbf{21} \times 10^6 + 20$$
$$\mathbf{26032020} := 8! \times 10^2 + \mathbf{22} \times 10^6 + 20$$
$$\mathbf{27032020} := 8! \times 10^2 + \mathbf{23} \times 10^6 + 20$$
$$\mathbf{28032020} := 8! \times 10^2 + \mathbf{24} \times 10^6 + 20$$
$$\mathbf{29032020} := 8! \times 10^2 + \mathbf{25} \times 10^6 + 20$$
$$\mathbf{30032020} := 8! \times 10^2 + \mathbf{26} \times 10^6 + 20$$
$$\mathbf{31032020} := 8! \times 10^2 + \mathbf{27} \times 10^6 + 20$$

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2.1.4 April-2020

In expression (7), let's consider $d = 1$ to $d = 30$, $m = 4$ and $x = 20$, we get the following representations for the month **April-2020**.

◊ *April - 2020* ◊

$$\mathbf{01042020} := 8! \times 10^2 - \mathbf{03} \times 10^6 + 10^4 + 20$$
$$\mathbf{02042020} := 8! \times 10^2 - \mathbf{02} \times 10^6 + 10^4 + 20$$
$$\mathbf{03042020} := 8! \times 10^2 - \mathbf{01} \times 10^6 + 10^4 + 20$$
$$\mathbf{04042020} := 8! \times 10^2 + \mathbf{00} \times 10^6 + 10^4 + 20$$
$$\mathbf{05042020} := 8! \times 10^2 + \mathbf{01} \times 10^6 + 10^4 + 20$$
$$\mathbf{06042020} := 8! \times 10^2 + \mathbf{02} \times 10^6 + 10^4 + 20$$
$$\mathbf{07042020} := 8! \times 10^2 + \mathbf{03} \times 10^6 + 10^4 + 20$$
$$\mathbf{08042020} := 8! \times 10^2 + \mathbf{04} \times 10^6 + 10^4 + 20$$
$$\mathbf{09042020} := 8! \times 10^2 + \mathbf{05} \times 10^6 + 10^4 + 20$$
$$\mathbf{10042020} := 8! \times 10^2 + \mathbf{06} \times 10^6 + 10^4 + 20$$
$$\mathbf{11042020} := 8! \times 10^2 + \mathbf{07} \times 10^6 + 10^4 + 20$$
$$\mathbf{12042020} := 8! \times 10^2 + \mathbf{08} \times 10^6 + 10^4 + 20$$
$$\mathbf{13042020} := 8! \times 10^2 + \mathbf{09} \times 10^6 + 10^4 + 20$$
$$\mathbf{14042020} := 8! \times 10^2 + \mathbf{10} \times 10^6 + 10^4 + 20$$
$$\mathbf{15042020} := 8! \times 10^2 + \mathbf{11} \times 10^6 + 10^4 + 20$$
$$\mathbf{16042020} := 8! \times 10^2 + \mathbf{12} \times 10^6 + 10^4 + 20$$
$$\mathbf{17042020} := 8! \times 10^2 + \mathbf{13} \times 10^6 + 10^4 + 20$$
$$\mathbf{18042020} := 8! \times 10^2 + \mathbf{14} \times 10^6 + 10^4 + 20$$
$$\mathbf{19042020} := 8! \times 10^2 + \mathbf{15} \times 10^6 + 10^4 + 20$$
$$\mathbf{20042020} := 8! \times 10^2 + \mathbf{16} \times 10^6 + 10^4 + 20$$
$$\mathbf{21042020} := 8! \times 10^2 + \mathbf{17} \times 10^6 + 10^4 + 20$$
$$\mathbf{22042020} := 8! \times 10^2 + \mathbf{18} \times 10^6 + 10^4 + 20$$
$$\mathbf{23042020} := 8! \times 10^2 + \mathbf{19} \times 10^6 + 10^4 + 20$$
$$\mathbf{24042020} := 8! \times 10^2 + \mathbf{20} \times 10^6 + 10^4 + 20$$
$$\mathbf{25042020} := 8! \times 10^2 + \mathbf{21} \times 10^6 + 10^4 + 20$$
$$\mathbf{26042020} := 8! \times 10^2 + \mathbf{22} \times 10^6 + 10^4 + 20$$
$$\mathbf{27042020} := 8! \times 10^2 + \mathbf{23} \times 10^6 + 10^4 + 20$$
$$\mathbf{28042020} := 8! \times 10^2 + \mathbf{24} \times 10^6 + 10^4 + 20$$
$$\mathbf{29042020} := 8! \times 10^2 + \mathbf{25} \times 10^6 + 10^4 + 20$$
$$\mathbf{30042020} := 8! \times 10^2 + \mathbf{26} \times 10^6 + 10^4 + 20$$

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2.1.5 May-2020

In expression (7), let's consider $d = 1$ to $d = 31$, $m = 5$ and $x = 20$, we get the following representations for the month **May-2020**.

◊ *May - 2020* ◊

$$\mathbf{01052020} := 8! \times 10^2 - \mathbf{03} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{02052020} := 8! \times 10^2 - \mathbf{02} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{03052020} := 8! \times 10^2 - \mathbf{01} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{04052020} := 8! \times 10^2 + \mathbf{00} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{05052020} := 8! \times 10^2 + \mathbf{01} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{06052020} := 8! \times 10^2 + \mathbf{02} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{07052020} := 8! \times 10^2 + \mathbf{03} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{08052020} := 8! \times 10^2 + \mathbf{04} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{09052020} := 8! \times 10^2 + \mathbf{05} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{10052020} := 8! \times 10^2 + \mathbf{06} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{11052020} := 8! \times 10^2 + \mathbf{07} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{12052020} := 8! \times 10^2 + \mathbf{08} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{13052020} := 8! \times 10^2 + \mathbf{09} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{14052020} := 8! \times 10^2 + \mathbf{10} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{15052020} := 8! \times 10^2 + \mathbf{11} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{16052020} := 8! \times 10^2 + \mathbf{12} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{17052020} := 8! \times 10^2 + \mathbf{13} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{18052020} := 8! \times 10^2 + \mathbf{14} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{19052020} := 8! \times 10^2 + \mathbf{15} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{20052020} := 8! \times 10^2 + \mathbf{16} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{21052020} := 8! \times 10^2 + \mathbf{17} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{22052020} := 8! \times 10^2 + \mathbf{18} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{23052020} := 8! \times 10^2 + \mathbf{19} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{24052020} := 8! \times 10^2 + \mathbf{20} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{25052020} := 8! \times 10^2 + \mathbf{21} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{26052020} := 8! \times 10^2 + \mathbf{22} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{27052020} := 8! \times 10^2 + \mathbf{23} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{28052020} := 8! \times 10^2 + \mathbf{24} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{29052020} := 8! \times 10^2 + \mathbf{25} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{30052020} := 8! \times 10^2 + \mathbf{26} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{31052020} := 8! \times 10^2 + \mathbf{27} \times 10^6 + 2 \times 10^4 + 20$$

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2.1.6 June-2020

In expression (7), let's consider $d = 1$ to $d = 30$, $m = 6$ and $x = 20$, we get the following representations for the month **June-2020**.

◊ *June - 2020* ◊

$$\mathbf{01062020} := 8! \times 10^2 - \mathbf{03} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{02062020} := 8! \times 10^2 - \mathbf{02} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{03062020} := 8! \times 10^2 - \mathbf{01} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{04062020} := 8! \times 10^2 + \mathbf{00} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{05062020} := 8! \times 10^2 + \mathbf{01} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{06062020} := 8! \times 10^2 + \mathbf{02} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{07062020} := 8! \times 10^2 + \mathbf{03} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{08062020} := 8! \times 10^2 + \mathbf{04} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{09062020} := 8! \times 10^2 + \mathbf{05} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{10062020} := 8! \times 10^2 + \mathbf{06} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{11062020} := 8! \times 10^2 + \mathbf{07} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{12062020} := 8! \times 10^2 + \mathbf{08} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{13062020} := 8! \times 10^2 + \mathbf{09} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{14062020} := 8! \times 10^2 + \mathbf{10} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{15062020} := 8! \times 10^2 + \mathbf{11} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{16062020} := 8! \times 10^2 + \mathbf{12} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{17062020} := 8! \times 10^2 + \mathbf{13} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{18062020} := 8! \times 10^2 + \mathbf{14} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{19062020} := 8! \times 10^2 + \mathbf{15} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{20062020} := 8! \times 10^2 + \mathbf{16} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{21062020} := 8! \times 10^2 + \mathbf{17} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{22062020} := 8! \times 10^2 + \mathbf{18} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{23062020} := 8! \times 10^2 + \mathbf{19} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{24062020} := 8! \times 10^2 + \mathbf{20} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{25062020} := 8! \times 10^2 + \mathbf{21} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{26062020} := 8! \times 10^2 + \mathbf{22} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{27062020} := 8! \times 10^2 + \mathbf{23} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{28062020} := 8! \times 10^2 + \mathbf{24} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{29062020} := 8! \times 10^2 + \mathbf{25} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{30062020} := 8! \times 10^2 + \mathbf{26} \times 10^6 + 3 \times 10^4 + 20$$

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2.1.7 July-2020

In expression (8), let's consider $d = 1$ to $d = 31$, $m = 7$ and $x = 20$ we get the following representations for the month **July-2020**.

♢ *July - 2020* ♢

$$\mathbf{01072020} := 6! \times 10^2 + \mathbf{01} \times 10^6 + 20$$
$$\mathbf{02072020} := 6! \times 10^2 + \mathbf{02} \times 10^6 + 20$$
$$\mathbf{03072020} := 6! \times 10^2 + \mathbf{03} \times 10^6 + 20$$
$$\mathbf{04072020} := 6! \times 10^2 + \mathbf{04} \times 10^6 + 20$$
$$\mathbf{05072020} := 6! \times 10^2 + \mathbf{05} \times 10^6 + 20$$
$$\mathbf{06072020} := 6! \times 10^2 + \mathbf{06} \times 10^6 + 20$$
$$\mathbf{07072020} := 6! \times 10^2 + \mathbf{07} \times 10^6 + 20$$
$$\mathbf{08072020} := 6! \times 10^2 + \mathbf{08} \times 10^6 + 20$$
$$\mathbf{09072020} := 6! \times 10^2 + \mathbf{09} \times 10^6 + 20$$
$$\mathbf{10072020} := 6! \times 10^2 + \mathbf{10} \times 10^6 + 20$$
$$\mathbf{11072020} := 6! \times 10^2 + \mathbf{11} \times 10^6 + 20$$
$$\mathbf{12072020} := 6! \times 10^2 + \mathbf{12} \times 10^6 + 20$$
$$\mathbf{13072020} := 6! \times 10^2 + \mathbf{13} \times 10^6 + 20$$
$$\mathbf{14072020} := 6! \times 10^2 + \mathbf{14} \times 10^6 + 20$$
$$\mathbf{15072020} := 6! \times 10^2 + \mathbf{15} \times 10^6 + 20$$
$$\mathbf{16072020} := 6! \times 10^2 + \mathbf{16} \times 10^6 + 20$$
$$\mathbf{17072020} := 6! \times 10^2 + \mathbf{17} \times 10^6 + 20$$
$$\mathbf{18072020} := 6! \times 10^2 + \mathbf{18} \times 10^6 + 20$$
$$\mathbf{19072020} := 6! \times 10^2 + \mathbf{19} \times 10^6 + 20$$
$$\mathbf{20072020} := 6! \times 10^2 + \mathbf{20} \times 10^6 + 20$$
$$\mathbf{21072020} := 6! \times 10^2 + \mathbf{21} \times 10^6 + 20$$
$$\mathbf{22072020} := 6! \times 10^2 + \mathbf{22} \times 10^6 + 20$$
$$\mathbf{23072020} := 6! \times 10^2 + \mathbf{23} \times 10^6 + 20$$
$$\mathbf{24072020} := 6! \times 10^2 + \mathbf{24} \times 10^6 + 20$$
$$\mathbf{25072020} := 6! \times 10^2 + \mathbf{25} \times 10^6 + 20$$
$$\mathbf{26072020} := 6! \times 10^2 + \mathbf{26} \times 10^6 + 20$$
$$\mathbf{27072020} := 6! \times 10^2 + \mathbf{27} \times 10^6 + 20$$
$$\mathbf{28072020} := 6! \times 10^2 + \mathbf{28} \times 10^6 + 20$$
$$\mathbf{29072020} := 6! \times 10^2 + \mathbf{29} \times 10^6 + 20$$
$$\mathbf{30072020} := 6! \times 10^2 + \mathbf{30} \times 10^6 + 20$$
$$\mathbf{31072020} := 6! \times 10^2 + \mathbf{31} \times 10^6 + 20$$

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2.1.8 August-2020

In expression (8), let's consider $d = 1$ to $d = 31$, $m = 8$ and $x = 20$ we get the following representations for the month **August-2020**.

◊ *August - 2020* ◊

$$\mathbf{01082020} := 6! \times 10^2 + \mathbf{01} \times 10^6 + 10^4 + 20$$
$$\mathbf{02082020} := 6! \times 10^2 + \mathbf{02} \times 10^6 + 10^4 + 20$$
$$\mathbf{03082020} := 6! \times 10^2 + \mathbf{03} \times 10^6 + 10^4 + 20$$
$$\mathbf{04082020} := 6! \times 10^2 + \mathbf{04} \times 10^6 + 10^4 + 20$$
$$\mathbf{05082020} := 6! \times 10^2 + \mathbf{05} \times 10^6 + 10^4 + 20$$
$$\mathbf{06082020} := 6! \times 10^2 + \mathbf{06} \times 10^6 + 10^4 + 20$$
$$\mathbf{07082020} := 6! \times 10^2 + \mathbf{07} \times 10^6 + 10^4 + 20$$
$$\mathbf{08082020} := 6! \times 10^2 + \mathbf{08} \times 10^6 + 10^4 + 20$$
$$\mathbf{09082020} := 6! \times 10^2 + \mathbf{09} \times 10^6 + 10^4 + 20$$
$$\mathbf{10082020} := 6! \times 10^2 + \mathbf{10} \times 10^6 + 10^4 + 20$$
$$\mathbf{11082020} := 6! \times 10^2 + \mathbf{11} \times 10^6 + 10^4 + 20$$
$$\mathbf{12082020} := 6! \times 10^2 + \mathbf{12} \times 10^6 + 10^4 + 20$$
$$\mathbf{13082020} := 6! \times 10^2 + \mathbf{13} \times 10^6 + 10^4 + 20$$
$$\mathbf{14082020} := 6! \times 10^2 + \mathbf{14} \times 10^6 + 10^4 + 20$$
$$\mathbf{15082020} := 6! \times 10^2 + \mathbf{15} \times 10^6 + 10^4 + 20$$
$$\mathbf{16082020} := 6! \times 10^2 + \mathbf{16} \times 10^6 + 10^4 + 20$$
$$\mathbf{17082020} := 6! \times 10^2 + \mathbf{17} \times 10^6 + 10^4 + 20$$
$$\mathbf{18082020} := 6! \times 10^2 + \mathbf{18} \times 10^6 + 10^4 + 20$$
$$\mathbf{19082020} := 6! \times 10^2 + \mathbf{19} \times 10^6 + 10^4 + 20$$
$$\mathbf{20082020} := 6! \times 10^2 + \mathbf{20} \times 10^6 + 10^4 + 20$$
$$\mathbf{21082020} := 6! \times 10^2 + \mathbf{21} \times 10^6 + 10^4 + 20$$
$$\mathbf{22082020} := 6! \times 10^2 + \mathbf{22} \times 10^6 + 10^4 + 20$$
$$\mathbf{23082020} := 6! \times 10^2 + \mathbf{23} \times 10^6 + 10^4 + 20$$
$$\mathbf{24082020} := 6! \times 10^2 + \mathbf{24} \times 10^6 + 10^4 + 20$$
$$\mathbf{25082020} := 6! \times 10^2 + \mathbf{25} \times 10^6 + 10^4 + 20$$
$$\mathbf{26082020} := 6! \times 10^2 + \mathbf{26} \times 10^6 + 10^4 + 20$$
$$\mathbf{27082020} := 6! \times 10^2 + \mathbf{27} \times 10^6 + 10^4 + 20$$
$$\mathbf{28082020} := 6! \times 10^2 + \mathbf{28} \times 10^6 + 10^4 + 20$$
$$\mathbf{29082020} := 6! \times 10^2 + \mathbf{29} \times 10^6 + 10^4 + 20$$
$$\mathbf{30082020} := 6! \times 10^2 + \mathbf{30} \times 10^6 + 10^4 + 20$$
$$\mathbf{31082020} := 6! \times 10^2 + \mathbf{31} \times 10^6 + 10^4 + 20$$

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2.1.9 September-2020

In expression (8), let's consider $d = 1$ to $d = 30$, $m = 9$ and $x = 20$ we get the following representations for the month **September-2020**.

◊ *September - 2020* ◊

$$\mathbf{01092020} := 6! \times 10^2 + \mathbf{01} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{02092020} := 6! \times 10^2 + \mathbf{02} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{03092020} := 6! \times 10^2 + \mathbf{03} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{04092020} := 6! \times 10^2 + \mathbf{04} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{05092020} := 6! \times 10^2 + \mathbf{05} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{06092020} := 6! \times 10^2 + \mathbf{06} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{07092020} := 6! \times 10^2 + \mathbf{07} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{08092020} := 6! \times 10^2 + \mathbf{08} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{09092020} := 6! \times 10^2 + \mathbf{09} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{10092020} := 6! \times 10^2 + \mathbf{10} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{11092020} := 6! \times 10^2 + \mathbf{11} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{12092020} := 6! \times 10^2 + \mathbf{12} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{13092020} := 6! \times 10^2 + \mathbf{13} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{14092020} := 6! \times 10^2 + \mathbf{14} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{15092020} := 6! \times 10^2 + \mathbf{15} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{16092020} := 6! \times 10^2 + \mathbf{16} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{17092020} := 6! \times 10^2 + \mathbf{17} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{18092020} := 6! \times 10^2 + \mathbf{18} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{19092020} := 6! \times 10^2 + \mathbf{19} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{20092020} := 6! \times 10^2 + \mathbf{20} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{21092020} := 6! \times 10^2 + \mathbf{21} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{22092020} := 6! \times 10^2 + \mathbf{22} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{23092020} := 6! \times 10^2 + \mathbf{23} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{24092020} := 6! \times 10^2 + \mathbf{24} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{25092020} := 6! \times 10^2 + \mathbf{25} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{26092020} := 6! \times 10^2 + \mathbf{26} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{27092020} := 6! \times 10^2 + \mathbf{27} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{28092020} := 6! \times 10^2 + \mathbf{28} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{29092020} := 6! \times 10^2 + \mathbf{29} \times 10^6 + 2 \times 10^4 + 20$$
$$\mathbf{30092020} := 6! \times 10^2 + \mathbf{30} \times 10^6 + 2 \times 10^4 + 20$$

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2.1.10 October-2020

In expression (8), let's consider $d = 1$ to $d = 31$, $m = 10$ and $x = 20$ we get the following representations for the month **October-2020**.

◊ *October - 2020* ◊

$$\mathbf{01102020} := 6! \times 10^2 + \mathbf{01} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{02102020} := 6! \times 10^2 + \mathbf{02} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{03102020} := 6! \times 10^2 + \mathbf{03} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{04102020} := 6! \times 10^2 + \mathbf{04} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{05102020} := 6! \times 10^2 + \mathbf{05} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{06102020} := 6! \times 10^2 + \mathbf{06} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{07102020} := 6! \times 10^2 + \mathbf{07} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{08102020} := 6! \times 10^2 + \mathbf{08} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{09102020} := 6! \times 10^2 + \mathbf{09} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{10102020} := 6! \times 10^2 + \mathbf{10} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{11102020} := 6! \times 10^2 + \mathbf{11} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{12102020} := 6! \times 10^2 + \mathbf{12} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{13102020} := 6! \times 10^2 + \mathbf{13} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{14102020} := 6! \times 10^2 + \mathbf{14} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{15102020} := 6! \times 10^2 + \mathbf{15} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{16102020} := 6! \times 10^2 + \mathbf{16} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{17102020} := 6! \times 10^2 + \mathbf{17} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{18102020} := 6! \times 10^2 + \mathbf{18} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{19102020} := 6! \times 10^2 + \mathbf{19} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{20102020} := 6! \times 10^2 + \mathbf{20} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{21102020} := 6! \times 10^2 + \mathbf{21} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{22102020} := 6! \times 10^2 + \mathbf{22} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{23102020} := 6! \times 10^2 + \mathbf{23} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{24102020} := 6! \times 10^2 + \mathbf{24} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{25102020} := 6! \times 10^2 + \mathbf{25} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{26102020} := 6! \times 10^2 + \mathbf{26} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{27102020} := 6! \times 10^2 + \mathbf{27} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{28102020} := 6! \times 10^2 + \mathbf{28} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{29102020} := 6! \times 10^2 + \mathbf{29} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{30102020} := 6! \times 10^2 + \mathbf{30} \times 10^6 + 3 \times 10^4 + 20$$
$$\mathbf{31102020} := 6! \times 10^2 + \mathbf{31} \times 10^6 + 3 \times 10^4 + 20$$

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2.1.11 November-2020

In expression (8), let's consider $d = 1$ to $d = 30$, $m = 11$ and $x = 20$ we get the following representations for the month **November-2020**.

◊ *November - 2020* ◊

$$\mathbf{01112020} := 6! \times 10^2 + \mathbf{01} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{02112020} := 6! \times 10^2 + \mathbf{02} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{03112020} := 6! \times 10^2 + \mathbf{03} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{04112020} := 6! \times 10^2 + \mathbf{04} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{05112020} := 6! \times 10^2 + \mathbf{05} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{06112020} := 6! \times 10^2 + \mathbf{06} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{07112020} := 6! \times 10^2 + \mathbf{07} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{08112020} := 6! \times 10^2 + \mathbf{08} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{09112020} := 6! \times 10^2 + \mathbf{09} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{10112020} := 6! \times 10^2 + \mathbf{10} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{11112020} := 6! \times 10^2 + \mathbf{11} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{12112020} := 6! \times 10^2 + \mathbf{12} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{13112020} := 6! \times 10^2 + \mathbf{13} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{14112020} := 6! \times 10^2 + \mathbf{14} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{15112020} := 6! \times 10^2 + \mathbf{15} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{16112020} := 6! \times 10^2 + \mathbf{16} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{17112020} := 6! \times 10^2 + \mathbf{17} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{18112020} := 6! \times 10^2 + \mathbf{18} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{19112020} := 6! \times 10^2 + \mathbf{19} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{20112020} := 6! \times 10^2 + \mathbf{20} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{21112020} := 6! \times 10^2 + \mathbf{21} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{22112020} := 6! \times 10^2 + \mathbf{22} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{23112020} := 6! \times 10^2 + \mathbf{23} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{24112020} := 6! \times 10^2 + \mathbf{24} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{25112020} := 6! \times 10^2 + \mathbf{25} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{26112020} := 6! \times 10^2 + \mathbf{26} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{27112020} := 6! \times 10^2 + \mathbf{27} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{28112020} := 6! \times 10^2 + \mathbf{28} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{29112020} := 6! \times 10^2 + \mathbf{29} \times 10^6 + 4 \times 10^4 + 20$$
$$\mathbf{30112020} := 6! \times 10^2 + \mathbf{30} \times 10^6 + 4 \times 10^4 + 20$$

2.1.12 December-2020

In expression (8), let's consider $d = 1$ to $d = 31$, $m = 11$ and $x = 20$ we get the following representations for the month **December-2020**.

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♢ *December - 2020* ♢

$$\mathbf{01122020} := 6! \times 10^2 + \mathbf{01} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{02122020} := 6! \times 10^2 + \mathbf{02} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{03122020} := 6! \times 10^2 + \mathbf{03} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{04122020} := 6! \times 10^2 + \mathbf{04} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{05122020} := 6! \times 10^2 + \mathbf{05} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{06122020} := 6! \times 10^2 + \mathbf{06} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{07122020} := 6! \times 10^2 + \mathbf{07} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{08122020} := 6! \times 10^2 + \mathbf{08} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{09122020} := 6! \times 10^2 + \mathbf{09} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{10122020} := 6! \times 10^2 + \mathbf{10} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{11122020} := 6! \times 10^2 + \mathbf{11} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{12122020} := 6! \times 10^2 + \mathbf{12} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{13122020} := 6! \times 10^2 + \mathbf{13} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{14122020} := 6! \times 10^2 + \mathbf{14} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{15122020} := 6! \times 10^2 + \mathbf{15} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{16122020} := 6! \times 10^2 + \mathbf{16} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{17122020} := 6! \times 10^2 + \mathbf{17} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{18122020} := 6! \times 10^2 + \mathbf{18} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{19122020} := 6! \times 10^2 + \mathbf{19} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{20122020} := 6! \times 10^2 + \mathbf{20} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{21122020} := 6! \times 10^2 + \mathbf{21} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{22122020} := 6! \times 10^2 + \mathbf{22} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{23122020} := 6! \times 10^2 + \mathbf{23} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{24122020} := 6! \times 10^2 + \mathbf{24} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{25122020} := 6! \times 10^2 + \mathbf{25} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{26122020} := 6! \times 10^2 + \mathbf{26} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{27122020} := 6! \times 10^2 + \mathbf{27} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{28122020} := 6! \times 10^2 + \mathbf{28} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{29122020} := 6! \times 10^2 + \mathbf{29} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{30122020} := 6! \times 10^2 + \mathbf{30} \times 10^6 + 5 \times 10^4 + 20$$
$$\mathbf{31122020} := 6! \times 10^2 + \mathbf{31} \times 10^6 + 5 \times 10^4 + 20$$

3 Final Remarks

(i) From the Examples 2.2 to 2.5, we observe that writing the years apart from 2020, we have same kind of results using any of three factorials, i.e., 5!, 8! or 6!. The advantage in considering 5! or 6! is that the days follow the same number on both sides, while in case of 8!, there is a difference of 4. Let's see below few more examples with 5! and 6!.

$$\mathbf{10.05.2601} := \mathbf{10052601} = 5! \times 10^2 + \mathbf{10} \times 10^6 + 4 \times 10^4 + 601$$
$$\mathbf{10.05.2601} := \mathbf{10052601} = 6! \times 10^2 + \mathbf{10} \times 10^6 - 2 \times 10^4 + 601$$

$$\mathbf{12.03.2888} := \mathbf{12032888} = 5! \times 10^2 + \mathbf{12} \times 10^6 + 2 \times 10^4 + 888$$
$$\mathbf{12.03.2888} := \mathbf{12032888} := 6! \times 10^2 + \mathbf{12} \times 10^6 - 4 \times 10^4 + 888$$

$$\mathbf{07.06.1246} := \mathbf{07061246} = 5! \times 10^2 + \mathbf{07} \times 10^6 + 5 \times 10^4 - 754$$
$$\mathbf{07.06.1246} := \mathbf{07061246} = 6! \times 10^2 + \mathbf{07} \times 10^6 - 1 \times 10^4 - 754$$

$$\mathbf{22.11.0889} := \mathbf{22110889} = 5! \times 10^2 + \mathbf{22} \times 10^6 + 10 \times 10^4 - 1111$$
$$\mathbf{22.11.0889} := \mathbf{22110889} = 6! \times 10^2 + \mathbf{22} \times 10^6 + 04 \times 10^4 - 1111$$

(ii) The days **02.02.2020**, **0.02.2020** and **22.02.2020** are two digits day happened **February, 2020**. The first one is **palindromic**. It can be seen in a **palindromic magic square** appeared in Alex Bellos's [13] column **"The Guardian"**. For more study on these numbers related with magic squares, see author's work [9]. Even though, these numbers appeared in a table of **February-2020**, let's see them again

$$\mathbf{02.02.2020} := \mathbf{02022020} = 5! \times 10^2 + \mathbf{02} \times 10^6 + 10^4 + 20$$
$$\mathbf{20.02.2020} := \mathbf{02022020} = 5! \times 10^2 + \mathbf{20} \times 10^6 + 10^4 + 20$$
$$\mathbf{22.02.2020} := \mathbf{02022020} = 5! \times 10^2 + \mathbf{22} \times 10^6 + 10^4 + 20$$

(iii) A different kind of work connected with numbers and magic squares connected by dates is done by author [1, 2, 3, 4, 5]. One of these work transformed in a **stamp** published by **Macau Post Office, China** [15]. This also appeared in Alex Bellos's column [14] **"The Guardian"**. Also appeared in Wikipedia [16].

(iv) There are two references [7, 8] summarizing author's work on numbers for the years 2019 and 2020. The year 2019 appeared in a **YouTube** by Matt Parker [10]. The year 2020 appeared in Alex Bellos's [11, 12] column **"The Guardian"**. These references are also given. Author's more study on numbers and Magic Squares can be seen in **Web-site:** *https://inderjtaneja.com*.

(v) This work brings the **Calendar** using the factorial of three numbers 5, 6 and 8. There may be much more possibilities of writing the dates using other kind of methods. It shall be a future study.

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