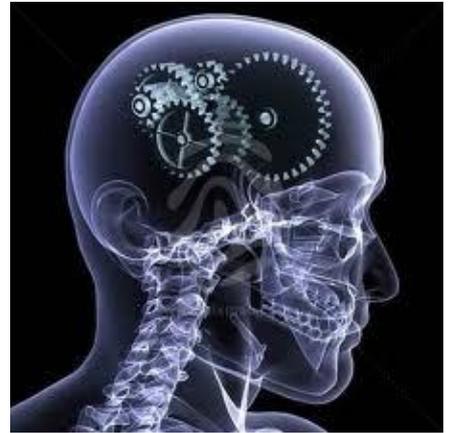


GROUP:

WHEN DID IT HAPPEN?

On January 5 of this year, German physicist Wilhelm Roentgen announced the discovery of the X ray. Solve this puzzle to learn the year.

- The two-digit number formed by my thousands and hundreds digits is equal to $2 \times \sqrt{81}$.
- The two-digit number formed by my tens and units digits is the product of the third and eighth prime numbers.
- The sum of all of my digits is 2 less than 5^2 .

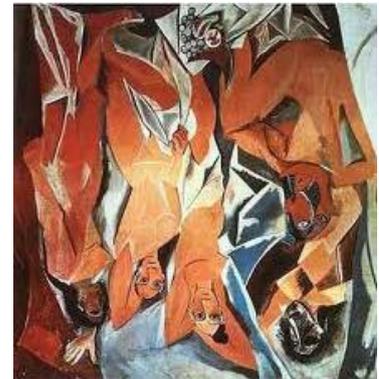


What year am I?

Thousands	Hundreds	Tens	Units
-----------	----------	------	-------

On December 4 of this year, a painting in the Metropolitan Museum of Art in New York City was found to have been hung upside down. It had been in this embarrassing position for 47 days. Solve this puzzle to learn the year.

- My tens digit is $\frac{2}{3}$ of my hundreds digit.
- Both my thousands and units digits are the multiplicative identity.
- The sum of all of my digits is equal to the seventh prime number.



What year am I?

Thousands	Hundreds	Tens	Units
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GROUP:

WHAT DOES A DUCK DO WHEN IT FLIES UPSIDE DOWN?



The answer is written below in code. To crack the code, solve these equations:

If $I + 5 = 6$, then $I = ?$

If $2U = S$, then $S = ?$

If $2C = 12$, then $C = ?$

If $Q + 2 = 7 - T$, then $Q = ?$

If $5 - A = 1 - I$, then $A = ?$

If $3Q = P$, then $P = ?$

If $2T + 2 = 6$, then $T = ?$

If $K - A + T = C - I - 1$, then $K = ?$

If $U - 3 = T - I$, then $U = ?$

Riddle Answer: (substitute the number for the letter it equals)

GROUP:

MATH MYSTERY MESSAGE

Use the numbers written below to discover the mystery message about a math idea. Each number represents a different letter of the alphabet. Some numbers are already shown with their respective letters. When you have decoded the message, write an example below the message to illustrate the math idea.



$\frac{1}{1}$ $\frac{2}{2}$ $\frac{3}{3}$ $\frac{4}{4}$ $\frac{5}{5}$ $\frac{O}{6}$ $\frac{7}{7}$ $\frac{8}{8}$ $\frac{9}{9}$ $\frac{1}{1}$

$\frac{6}{6}$ $\frac{11}{11}$ $\frac{T}{1}$ $\frac{12}{12}$ $\frac{6}{6}$

$\frac{N}{13}$ $\frac{3}{3}$ $\frac{14}{14}$ $\frac{15}{15}$ $\frac{1}{1}$ $\frac{16}{16}$ $\frac{17}{17}$ $\frac{3}{3}$

$\frac{13}{13}$ $\frac{8}{8}$ $\frac{18}{18}$ $\frac{19}{19}$ $\frac{E}{3}$ $\frac{5}{5}$ $\frac{20}{20}$

$\frac{3}{3}$ $\frac{21}{21}$ $\frac{8}{8}$ $\frac{15}{15}$ $\frac{22}{22}$ $\frac{20}{20}$ $\frac{15}{15}$

$\frac{P}{4}$ $\frac{6}{6}$ $\frac{20}{20}$ $\frac{16}{16}$ $\frac{1}{1}$ $\frac{I}{16}$ $\frac{17}{17}$ $\frac{3}{3}$

$\frac{13}{13}$ $\frac{8}{8}$ $\frac{18}{18}$ $\frac{19}{19}$ $\frac{3}{3}$ $\frac{5}{5}$

Example:

GROUP:

FOLLOWING THE ROAD

The goal is to enter the grid from the number 1 in the top left corner, and to go through all the numbers, in order (1 - 2 - 3 - 4 - 1 - 2 - 3 - 4 - ...), once and only once. The path cannot cross itself, but it can go horizontally, vertically, or diagonally.

Start

1	2	4	1	2	2	3	4
3	3	1	2	1	3	1	1
4	2	4	3	4	4	3	2
1	3	2	4	1	2	1	3
1	2	1	4	4	3	2	4
2	4	3	3	1	2	1	3
4	3	3	4	2	1	4	3
1	2	1	2	3	4	2	4

End

Enter this number grid from the top left corner, and travel through the squares by moving through only odd-numbered squares to reach the bottom right corner. You can move either horizontally or vertically, but NOT diagonally.

Start

3	9	7	5	3	7	3	6	7
7	2	9	8	6	2	5	8	3
5	8	5	2	3	6	3	7	9
3	6	7	4	7	4	2	6	3
7	4	3	9	5	3	5	2	7
9	2	9	6	8	6	4	6	8
3	6	7	3	5	2	7	5	9
5	4	2	8	3	8	3	6	7
7	3	5	6	9	5	7	2	9

End