## Puzzles

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1) A

B G E
C $\quad \mathrm{F}$
Each of seven digits from $0,1,2,3,4,5,6,7,8 \& 9$ is :
i) Represented by a different letter in the figure above.
ii) Positioned in the figure above so that $A \times B \times C, B \times G \times E$, and $D \times E \times F$ are equal. Which digit does $G$ represent?
2) My house has a Number
i) If my house is a multiple of 3 , it is a number from 50 through 59,
ii) If it is not a multiple of 4, then it is a number from 60 through 69,
iii) If it is not a multiple of 6 , then it is a number from 70 through 79 .
What is my house number?
3) In a pile of 10 books, there are 3 of History, 3 of Hindi, 2 of Mathematics and 2 of English. Taking from above, there is an English book between a History \& Mathematics book, a History between Maths \& English, a Hindi between an English \& Maths, a Maths between 2 Hindi books \& 2 Hindi books, between a Maths \& History book. Book of which subject is at the 6th position from the top!
4) Why are 2000 American dollar notes worth more than 1999 American dollar notes ?
5) Rearrange the letters in the words "new door" to make one word.
6) Some informations are given below :
i) Ashland is north of East Liverpool and
west of Coshocton.
ii) Bowling Green is north of Ashland and west of Fredericktown.
iii) Dover is south and east of Ashland.
iv) East Liverpool is north of Fredericktown and east of Dover.
v) Fredericktown is north of Dover and west of Ashland.
vi) Coshocton is south of Fredericktownand west of Dover.
Now answer the following questions:
a) Which of the towns mentioned earlier is furthest to the north-west?
b) Which town(s) is/are both north and east of Fredericktown?
c) Which town (s) must be situated both south and west of one other town?

## SOLUTIONS

1) Clearly, no letter can be 0,5 or $7 . \therefore$ The product for each row, then, is a multiple of 1 , $2,3,4,6,8, \& 9 . \therefore \mathrm{LCM}=72 . \therefore$ The product should be a multiple of 72 . But the product can't be $72 \times 2,72 \times 3$, etc. $\because$ it is not possible, $\therefore$ product is 72 .
Then,

$$
\begin{aligned}
72 & =1 \times 8 \times 9 \\
& =2 \times 36=2 \times 4 \times 9 \\
& =3 \times 24=2 \times 4 \times 6
\end{aligned}
$$

$\because 4 \& 9$ are used twice B or E is $4 \therefore \mathrm{G}=2$
2) Suppose my house number is a multiple of 3 . $\therefore$ It can be either 51,54 or 57
But it can't be any of these nos, $\because$ none is a multiple of $4 . \therefore$ My house no is not a multiple of 3 . Also it is not a multiple of 6 .
$\therefore$ My house number can be $70,71,73,74,76$, 77 or 79.
$\because$ It is not a multiple of 3 . But it is a multiple of $4, \therefore$ the number is 76 .
3) The arrangement of books:

M, E, M, H, Hi, M, Hi, Hi, H.
$\therefore$ Hindi book is at 6 th position from top.
4) 2000 dollar notes are worth $\$ 2000$, while 1999 dollar notes are worth only \$ 1999.
5) ONE WORD !
6) a) Bowling Green.
b) Ashland and East Liverpool.
c) Dover, Coshocton and Fredericktown.

