



Logic Stretch

271. _____ Celia, Desi and Everett are each wearing a hat that displays a different whole number from 1 to 9, inclusive. Each number cannot be seen by the person wearing it, but that number is visible to the other two individuals. Everett says, "The sum of the numbers I see is 6." Celia says, "The product of the numbers I see is 10." What is the sum of the numbers that Everett could possibly have on his hat?

272. _____ people In a survey, 30 people reported that they enjoy some combination of walking, hiking and jogging. The number who enjoy only walking, the number who enjoy only hiking and the number who enjoy only jogging are all equal. Likewise, the number who enjoy only walking and hiking, the number who enjoy only walking and jogging and the number who enjoy only hiking and jogging are equal. In addition, the survey showed that half as many people enjoy exactly two of these activities as those who enjoy only one activity. If three people enjoy all three activities, how many people enjoy jogging?

273. _____

$$\begin{array}{r}
 \diamond \square \bigcirc \\
 - \quad \bigcirc \diamond \\
 \hline
 \bigcirc \square
 \end{array}$$

In the subtraction problem shown, the shapes \diamond , \square and \bigcirc each represent a different digit. What is the value of $\square \diamond \div \bigcirc$?

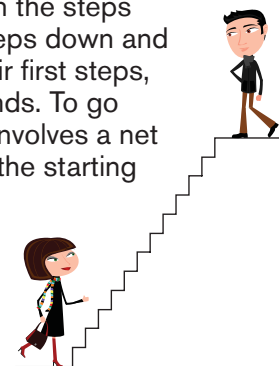
274. Box Three identical boxes contain tennis balls, baseballs or both. A label is affixed to each box. The three labels correctly describe the three boxes, but none of the labels is on the correct box. Box 1 is labeled "Tennis Balls." Box 2 is labeled "Baseballs." Box 3 is labeled "Tennis Balls & Baseballs." Devon reaches into Box 3 and pulls out a baseball. Which box contains only tennis balls?

275. Page Drew purchased a used 50-page book at the book fair. Drew later realized that the book, in which left-hand pages contained even page numbers and right-hand pages contained odd page numbers, did not contain all 50 pages. The sum of the page numbers on the pages that Drew's book did contain was 1242. What is the greatest page number that could be on a page missing from Drew's book?

276. _____ In the addition problem shown, each letter stands for a different digit. If $T = 3$, what is the value of the four-digit number MATH?

$$\begin{array}{r}
 \text{G E T} \\
 + \text{T H E} \\
 \hline
 \text{M A T H}
 \end{array}$$

277. _____ seconds Starting at the lower landing of a staircase, Porscha goes up the steps by repeating a three-step sequence: moving two steps up and then moving one step down. Starting at the upper landing of the same staircase, Micah goes down the steps by repeating a different three-step sequence: moving two steps down and then moving one step up. After simultaneously moving to their first steps, Porscha and Micah both move to another step every 3 seconds. To go from the upper landing to the lower landing of the staircase involves a net movement of 12 steps. How many seconds after moving to the starting steps will Porscha and Micah reach the same step?



278. _____ If the six-digit number $3D6,D92$ is divisible by 11, what is the value of D ?

279. _____ A special deck of cards contains cards numbered 1 through 4 for each of four suits. Each of the 16 cards has a club, diamond, heart or spade on one side and the number 1, 2, 3 or 4 on the other side. After a dealer mixed up the cards, three were selected at random. What is the probability that of these three randomly selected cards, displayed here, one of the cards showing the number 2 has a heart printed on the other side? Express your answer as a common fraction.



280. _____ The units digit of a three-digit number, ABC , is moved to the left of the remaining two digits to make a new three-digit number, CAB . If $CAB - ABC = 162$, what is the sum of the least and greatest possible values of ABC ?