

Q1

The value of $\frac{1}{2 - \frac{1}{2 - \frac{1}{2 - \frac{1}{2}}}}$ is equal to _____.

- A. $\frac{3}{4}$
- B. $\frac{4}{5}$
- C. $\frac{5}{6}$
- D. $\frac{6}{7}$
- E. $\frac{7}{8}$

Q2

There are 37 numbers on a roulette wheel: 0 and the whole numbers from 1 to 36. What is the chance of getting a prime number?

- A. 10 out of 37
- B. 11 out of 37
- C. 12 out of 37
- D. 13 out of 37
- E. 14 out of 37

Q3

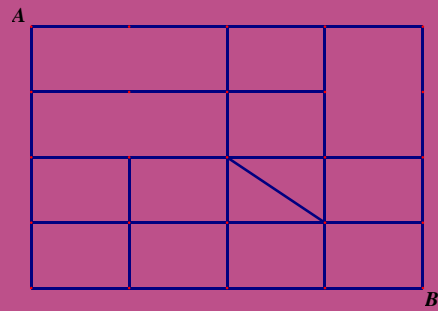
The 7-digit numbers 74A52B1 and 326AB4C are multiples of 3. Which one of the following is the value of C ?

- A. 1
- B. 2
- C. 3
- D. 5
- E. 8

Q4

What is the number of shortest paths to B?

- A. 4
- B. 5
- C. 6
- D. 8
- E. None of the above



from A

Q5

Jessica is an avid reader. She bought a copy of the best seller book *Math is Beautiful*. On the first day, Jessica read $\frac{1}{5}$ of the pages plus 12 more, and on the second day she read $\frac{1}{4}$ of the remaining pages plus 15 pages. On the third day, she read $\frac{1}{3}$ of the remaining pages plus 18 pages. She then realized that there were only 62 pages left to read, which she read the next day. How many pages are in this book?

- A. 120
- B. 180
- C. 240
- D. 300
- E. 360

Q6

Reverse the digits of 1746 and we get 6471, the new number is larger than the original number by 4725. How many four-digit numbers satisfy such condition?

- A. 16
- B. 17
- C. 20
- D. 21
- E. None of the above

Q7

Every day at school, Jo climbs a flight of 6 stairs. Jo can climb using 1, 2 or 3 steps or a combination of any of them. How many ways can Jo climb the flight of 6 stairs?

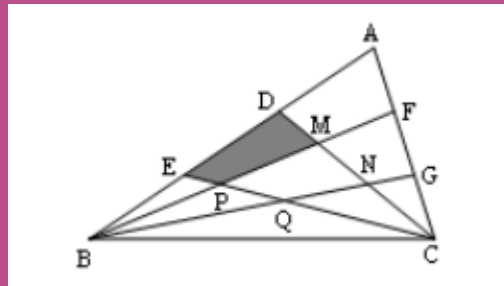
- A. 13
- B. 18
- C. 20
- D. 22
- E. 24

Q8

How many zeroes does the product $1 \times 2 \times 3 \times \dots \times 2017$ end with?

Q9

As shown in the figure, the area of $\triangle ABC$ is 42. Points D and E divide the side AB into 3 equal parts, while F and G divide AC into 3 equal parts. CD intersects BF and BG at M and N, respectively. CE intersects BF and BG at P and Q, respectively. What is the area of the quadrilateral EPMD?



Q10

Let us call a whole number "lucky" if its digits can be divided into two groups so that the sum of the digits in each group is the same. For example, 34175 is lucky because $3 + 7 = 4 + 1 + 5$. Find the smallest 4-digit lucky number, whose neighbour is also a lucky number (i.e. the whole number next to it is a lucky number as well)