

1. $\frac{11!-9!}{10!} = ?$
 A) 10 B) $10\frac{1}{10}$ C) $10\frac{9}{10}$ D) 1 E) $\frac{1}{10}$

2. Evaluate $\frac{16!-15!}{14!+13!}$.
 A) 210 B) 180 C) 150 D) 120 E) 90

3. $\frac{10!+9!}{12!-11!} = ?$
 A) 110 B) 55 C) 24 D) $\frac{1}{55}$ E) $\frac{1}{110}$

4. $\frac{n!+(n+1)!}{(n+2)!} = ?$
 A) n B) $n+1$ C) $\frac{1}{n}$ D) $\frac{1}{n+1}$ E) $\frac{1}{n+2}$

5. If $P(n,4) = 20 \cdot P(n,2)$, then n is
 A) 2 B) 4 C) 5 D) 7 E) 9

6. In how many different ways can six players of a volleyball team be arranged in a line?
 A) 6 B) 24 C) 30 D) 120 E) 720

7. Find the number of ways in which 5 history, 4 geography and 2 psychology books can be placed on a shelf so that the arrangement begins and ends with a psychology book?
 A) $9!$ B) $2 \cdot 9!$ C) $2 \cdot 4! \cdot 5!$ D) $4! \cdot 5!$ E) 40

8. A family with 7 children stands in a line. In how many ways can they be ordered if the elder daughter stands between mother and father?
 A) $6!$ B) $2 \cdot 6!$ C) $7!$
 D) $7 \cdot 2 \cdot 6!$ E) $9!$

9. How many 5-digit numbers can be written, without repetition, which contains 7 in the middle? (e.g. 54782,62739)
 A) 2688 B) 2542 C) 2464 D) 2328 E) 2214

10. How many positive integers less than 500 can be formed from 3,4,5,6,7 if no digit is repeated more than once?
 A) 36 B) 49 C) 24 D) 25 E) 44

11. How many three-digit even numbers can be written by using the numbers 0, 1, 2, 3, 4 without repetition?
 A) 30 B) 35 C) 40 D) 42 E) 60

12. By the letters of the word SEBAT, 3-letter words are formed. How many of them do not contain T?
 A) 12 B) 24 C) 32 D) 34 E) 38

13. In how many different ways can 3 girls and 5 boys sit at a round table, if girls must sit together?
 A) 718 B) 720 C) 726 D) 732 E) 740

14. Joe and Martin with their 3 friends will sit at a round table. In how many different ways can they sit if Joe and Martin are next to each other?
 A) 12 B) 24 C) 48 D) 120 E) 124

15. How many different numbers greater than 10000 can be written from the digits of 23445?
 A) 60 B) 72 C) 84 D) 100 E) 120

16. How many different 6-digit numbers can be formed from the digits of the number 205423?
 A) 120 B) 240 C) 300 D) 360 E) 600

17. How many different 7-letter words can be written by using the letters of the word "KARAKOL"?
 A) 210 B) 840 C) 1260 D) 2520 E) 5040

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