1

A photo is being taken of Central High School's nine-member wrestling team. The team will stand in two rows, with the five shortest in the front row. The coach is also in the picture, in the middle of the back row. One of the taller boys is known to misbehave; to keep him from disrupting the photo session, he is placed next to the coach. How many possible arrangements of people are there for the photo?

A. 24
B. 30
C. 720
D. 1440
E. 2880

2

How many numbers between 0 and 1670 have a prime tens digit and a prime units digit?

A. 268
B. 272
C. 202
D. 112
E. 262

3

Ten telegenic contestants with a variety of personality disorders are to be divided into two “tribes” of five members each, tribe A and tribe B, for a competition. How many distinct groupings of two tribes are possible?

A. 120
B. 126
C. 252
D. 1200
E. 1260

4

A certain company consists of 3 managers and 8 non-managers. How many different teams of 3 employees can be formed in which at least one member of the team is a manager and at least one member of the team is not a manager? (Two groups are considered different if at least one group member is different)

A. 84
B. 108
C. 135
D. 270
E. 990

5

How many different arrangements of A, B, C, D, and E are possible where A is adjacent to neither B nor D?

(A) 96
(B) 60
(C) 48
(D) 36
(E) 17

6

How many different arrangements of letters are possible if three letters are chosen from the letters A through E and the letters E and A must be among the letters selected?

(A) 72
(B) 64
(C) 36
(D) 18
(E) 6

7

Find the number of ways in which 4 letters may be selected from the word "Examination"?

A. 66
B. 70
C. 136
D. 330
E. 4264

8

A 5-digit code consists of one number digit chosen from 1, 2, 3 and four letters chosen from A, B, C, D, E. If the first and last digit must be a letter digit and each digit can appear more than once in a code, how many different codes are possible?

A. 375
B. 625
C. 1,875
D. 3,750
E. 5,625

9

In the Land of Oz only one or two-letter words are used. The local language has 66 different letters. The parliament decided to forbid the use of the seventh letter. How many words have the people of Oz lost because of the prohibition?

A. 65
B. 66
C. 67
D. 131
E. 132

10

How many even 3 digit integers greater than 700 with distinct non zero digits are there ?

A. 729
B. 243
C. 108
D. 88
E. 77

11

In a business school case competition, the top three teams receive cash prizes of $1000, $ 2000, and $ 3000. while remaining teams are not ranked and do not receive any prizes, there are 6 participating teams, named A, B, C, D, E, F. If team A wins one of the prizes, team B wins also one of the prizes. How many outcomes of the competition are possible ?

A. 18
B. 28
C. 36
D. 84
E. 120