LOGIC QUANTITATIVE TEST

FAMILY NAME:	NAME:
DATE OF BIRTH:	ID NUMBER:

CHECK / THE CORRECT ANSWER.

1) Container "A" and container "B" each hold a certain number of marbles. If we transfer 12 marbles from "B" to "A", the latter will then have one marble less than "B". Now, if we transfer 7 marbles from "A" to "B", the latter will end up with four times as many marbles as "A". How many marbles were there originally in the two containers "A" and "B"?

☐ 20 and 40	☐ 20 and 45	☐ 25 and 40	☐ 30 and 35	☐ 35 and 30

2) In a rectangle one of its sides is by 30% shorter than the other one. Since the perimeter of said rectangle is 510 m., what is its area?

☐ 1.500 m^2	☐ 1.575 m^2	☐ 15.000 m^2	☐ 15.750 m^2	☐ 17.500 m^2

3) The total surface of a cube is 54 square meters. What does its diagonal measure?

☐ 9 m.	☐ $3\sqrt{3}$ m.	☐ $3\sqrt{2}$ m.	☐ π m.	☐ 27 m.

4) At a car-dealer there are several cars available for models "A" and "B". Five further cars arrive for each one of the two models. The ratio between "A" and "B" is now 4 to 5. Later on, 10 cars model "A" and 10 cars model "B" are sold. The ratio now is 3 to 5. How many cars were there originally for each one model?

☐ 3 , 5	☐ 11 , 15	☐ 15 , 11	☐ 12 , 14	☐ no previous answer is correct

5) In a rectangle, if we stretch one side by 20% and reduce the other side by 20%, by how much will its area vary?

☐ will remain the same	☐ will increase by 2%	☐ will increase by 4%	☐ will decrease by 2%	☐ will decrease by 4%

6) Which is the number that stands in the middle between 1/6 and 1/9?

☐ 2/15	☐ 5/36	☐ 1/7	☐ 1/8	☐ 3/23

7) A car running at steady speed employs 1 minute to cover the distance between km1 and km3. How much time will it take to cover the distance from km1 to km6?

☐ 2 min.	☐ 2 min. and 20 sec.	☐ 2 min. and 30 sec.	☐ 3 min.	☐ 3 min. and 20 sec.

8) Mario, Luigi and Michele are all over 30 years of age. The sum of their ages exceeds 100 but is lower than 105. The difference in their respective ages is no higher than 4 and no lower than 2. How old is the youngest of the three friends?

☐ 31	☐ 32	☐ 33	☐ 34	☐ 35

9) How many three-digit numbers (from100 to 999) are there where the sum of those digits equals 9?

☐ 7	☐ 12	☐ 15	☐ 28	☐ 45

10) What is the area of the annulus (corona circolare) given that the chord tangent to the inner circumference is 40 cm. long?

☐ 0.04 m^2	☐ 400 cm^2	☐ 1.600 cm^2	☐ 200 π cm^2	☐ 400 π cm^2

11) On a table there are some boxes each one holding the same number of mixed pellets, red and black. Knowing that the total number of pellets is 221 and that the red pellets are 8/5 of the black ones in each box, how many boxes are there?

☐ 13	☐ 17	☐ 26	☐ 34	☐ 51

12) The binary numeral system uses only the digits 0 and 1. Therefore 2 is indicated as 10; 3 as 11; 4 as 100; 5 as 101; 6 as 110; 7 as 111, etc. How many 1s and how many 0s will we need to indicate number 23?

☐ (5 , 0)	☐ (5 , 1)	☐ (4 , 0)	☐ (4 , 1)	☐ (4 , 2)

13) If we divide 121 by 27 the product of the quotient by the remainder will be:

☐ 0	☐ 48	☐ 52	☐ 60	☐ 65

14) I have invested a capital sum "C" at a yearly 5% compound interest. After 4 years, my capital and interest amount to € 24,000. What was the initially invested sum (rounded off to the nearest Euro)?

☐ € 19,500	☐ € 19,735	☐ €19,745	☐ €20,000	☐ € 20,150

15) How will the volume of a given cone vary if we cut the length of its base diameter in half and double its altitude?

☐ It will not change	☐ it will double	☐ it will increase by π	☐ it will decrease by π	☐ it will be halved.

16) A jar contains 2 litres wine and 1 litre water. How much wine must we add in order to have a wine percentage of 75%?

☐ 1 litre	☐ 1 litre and a half	☐ 2 litres	☐ 2 litres and a quarter	☐ 2 litres and a half

Scoring criteria: points
1 for each correct answer ;
0 for no answer or more than one answer for the same question;
- 0,25 for each one wrong answer.
The test will be passed with at least 6 points.

Trieste, 2011 September 10