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Admission test for the 1st year of the Bachelor's cycle
Session of 03.08.2024
Calculations, logic and reasoning
Duration: 1h30

Answer directly on the test. Correct answer +1 point. Wrong answer -0.5 points. No response 0 points.

⚠ Calculator not allowed ❌

This test assesses the mastery of simple knowledge in the areas of arithmetic, geometry and algebra. The questions are not listed in order of difficulty.**Use of calculator is not permitted**.

1. In Ndolekistan, the ratio of number of people with glasses to total population is 47 out of 3,458? The percentage of people with glasses in Ndolekistan is
(A) Less than 2%
(B) Between 3 and 10%
(C) Greater than 10%

2. A farmer plows a field. He works regularly and without interruption until his task is completely accomplished. At what time does he finish, knowing that he started at 8:15 a.m., and by 12 p.m., he has plowed half the field?
(*Fill in the answer in the box*)

3. David and Agnes both go on vacation to Italy. Agnès has twice as much money as David and the latter has 60,000F less than Agnès. Together the 2 friends have? (*Fill in the answer in the box*)

4. Knowing that $2 < x < 4$ and $3 < y < 5$, we can conclude that y is greater than x.
(A) True.

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(B) False.

5. What is the percentage increase in the surface area of a disk given that its radius has increased by 10%?
(A) 10%
(B) 11%
(C) 20%
(D) 21%
(E) The statement is incomplete

6. Mr. Kokou owns a rectangular piece of land; following an inheritance, the length of the land was increased by 10 m, and the width was also increased by 10 m.
(A) The surface area of the land has increased by 100 m2.
(B) The surface area of the land has increased by more than 100 m2.

7. To train, a runner uses a 1,000-meter stadium track for 45 minutes. What distance in kilometers has he covered knowing that he runs at 12 km/h. (***Fill in the answer in the box***)

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8. The Douala - Yaoundé highway, with a length of 280 km, is divided into three sections. What is the length of the longest section knowing that there is a section which measures 155km. (***Fill in the answer in the box***)

9. Irene drives non-stop for three hours to get to her mother's house. What was his average speed? She covered a third of the journey at 160 km/h and the rest at 64 km/h.
(A) 50 km/h.
(B) 80 km/h.
(C) 100 km/h.
(D) The statement does not answer the question.

10. Knowing that is a strictly positive number, knowing the value of only allows us to determine the value ofxy $\frac{\frac{1+y}{x+2}}{\frac{x+y}{x+2}-1}$
(A) True.
(B) False.

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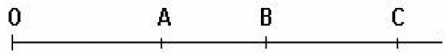
11. On a half-line with origin O, consider 3 points A, B and C such that OA < OB < OC. Consider the respective midpoints M_1 and M_2 of [AB] and [BC]. What is the value of AC in cm? OM_1 = 17 cm and OM_2 = 24 cm. (*Fill in the answer in the box*)



12. What is the volume in cm3 of this cube knowing that each of its faces has a surface area of 16 cm2. (*Fill in the answer in the box*)

13. Two tiles A and B have respective density dA and dB. Which of the two is heavier?
(1) dA = dB + 0.04.
(2) The two tiles have the same surface.

The two pieces of information together help answer the question.
(A) True.
(B) False.

14. During a competition, a total bonus of 700,000F is distributed to the first three, the largest bonus being awarded to the first. How much does the first competitor receive? (*Fill in the answer in the box*)

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15. How old is Valérie?
(1) In 3 years, Valérie will be twice as old as Sandrine currently is. (2) Corinne's age is equal to the average age of Valérie and Sandrine.

The two pieces of information together help answer the question.

(A) True.
(B) False.

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16. A capital of 10,000 F is invested with an interest rate of 10% annually. In how many years will the accumulated interest exceed the capital?
A) 5 years B) 7 years C) 8 years D) 10 years E) 12 years

17. Charlotte takes 3 hours to prepare Christmas dinner. If Charlotte is helped by her friend Eva, the meal is prepared in 1 hour. How long, in minutes, will Eva be able to prepare the meal by herself? (***Fill in the answer in the box***)

18. A square lawn is bordered by a 40-meter-long wall. We plan to dig a round pond there, as large as possible. How much lawn area will we be able to use?
A) 82 m2 B) 78.5 m2 C) 66 m2 D) 40 m2 E) 38.6 m2

19. A family gathers for a Christmas meal. To say hello, 66 hugs are exchanged. Knowing that all members have kissed all other members once, how many members does this family have?
A) 9 B) 10 C) 11 D) 12 E) 13

20. The average age of a family of four is 30 years. The father's age is double that of his son and triple that of his daughter. The sum of the ages of the father and mother is 85 years. How old is the little girl?
A) 11 B) 14 C) 17 D) 21 E) 25