ĐỀ SỐ 04

1. What is the next number in the sequence: 1, 3, 7, 15, 31, 63, …

A. 123 B. 124 C. 125 D. 126 E. 127

2. Which one of the following digits does not appear in the right answer of: "five thousand four hundred thirty-two minus one thousand three hundred

A. One B. Two C. Three D. Four E. Five

3. A number gives a remainder of 3 when divided by 7. It also gives a remainder of 12 and 7 when divided by 17 and 23 respectively. What is the remainder when that number is divided by 2737?

A. 2695 B. 2696 C. 2697 D. 2698 E. 2699

4. What is the value of (3/4)/25?

A. 0.03 B. 0.05 C. 0.07 D. 0.09 E. 0.3

5. What is the value of 27.38 + 46.32?

A. 73.3 B. 73.5 C. 73.7 D. 73.9 E. 7.5

6. Jane cuts a cake into sevenths. Afterward, she cuts every seventh into eighths. What part of the whole cake is one piece?

A. a fiftieth B. a fifty-second C. a fifty-fourths

D. a fifty-sixths E. a fifty-eighths

7. A rectangular piece of paper has a width of 5cm and a length of 8 cm. We cut this paper into a new one that has a shape of a square whose side is equal to the width of the given paper. Find the perimeter of the paper left.

A. 16 cm B. 17 cm C. 18 cm D. 19 cm E. 20 cm

8. The radius of circle A is seven times the radius of circle B. How many times is the area of circle A greater than the area of circle B?

A. 7 B. 14 C. 21 D. 49 E. 56

9. There are 25% of excellent students, 55% of good students, and the rest are students who get fair results in a class. How many students are there in that class, given that there are 5 students that obtain fair results?

A. 15 B. 20 C. 25 D. 30 E. 35

10. How many multiples of 5 that are greater than 10 and less than 50?

A. 3 B. 5 C. 7 D. 8 E. 9

11. In a conference, there are 100 participants. Given that there are 10 people who don't speak English and Russian, there are 75 people who speak Russian and 83 people who speak English. How many people are there who speak both Russian and English?

A. 68 B. 69 C. 70 D. 71 E. 72

12. A is a natural number that has 2004 digits. A is divisible by 9, B is the sum of all digits of A, C is the sum of all digits of B, D is the sum of all digits of C. Find D.

A. 1 B. 3 C. 5 D. 7 E. 9

13. We have two natural numbers A and B. Given that A < B and they have some common properties: 1. They are 2-digit numbers 2. 2 digits in every number are the same. Those numbers are not divisible by 2, 3, 5. Find A and B.

A. 11 and 77 B. 11 and 44 C. 33 and 66 D. 99 and 22 E. 55 and 88

14. There are 222 players taking part in 2 subjects: soccer and volleyball in a competition. Each soccer team has 11 players. Each volleyball team has 6 players. Given that there are 27 teams altogether. Find the number of soccer teams and the number of volleyball teams respectively.

A. 14 and 13 B. 10 and 17 C. 12 and 15 D. 16 and 11 E. 15 and 12

15. What is the last digit of the following product?

$$\underbrace{2 \times 2 \times 2 \times \ldots \times 2 \times 2 \times 2}_{\textbf{2003 factors 2}}$$

A. 7 B. 8 C. 9 D. 5 E. 4

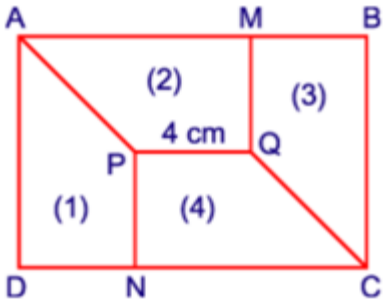
16. Consider the following sequence: GMATHSGMATHSGMATHS… What is the 1000th letter in the sequence?

A. G B. M C. A D. T E. S

17. Thomas has some marbles which are not over 80. Given that the number of red marbles is 5 times the number of blue marbles. If he has 3 more blue marbles, the number of red marbles will be 4 times the number of blue marbles. How many blue marbles does he have at first?

A. 10 B. 11 C. 12 D. 13 E. 14

18. Give that (1), (2), (3), (4) are congruent right trapeziums. It is known that PQ = 4 cm. Find the area of rectangle ABCD



A. 96 B. 98 C. 128 D. 120 E. 100

19. Bruce brought to the market 5 baskets of apples. He brought 2 types of apples there. The number in each basket was: 20, 25, 30, 35, 40 respectively. Each basket contained 1 type of apple. After selling one basket, he noticed that: The number of type II left was equal to half the number of type I. How many type II apple was there left?

A. 20 B25 C. 30 D. 35 E. 40

20. In a new operation,

$5 \Delta 5 = 25$

$6 \Delta 6 = 30$

$7 \Delta 7 = 35$

Find the value of $20 \Delta 5$.

A. 110 B. 115 C. 120 D. 125 E. 130

21. Steve multiplied a number by 2002, but he forgot to write two numbers 0 of the number 2002. Therefore, the result was decreased 3965940 units. Which number did Steve want to multiply with 2002 at first?

A. 2000 B. 2001 C. 2002 D. 2003 E. 2004

22. Eight empty bottles can be traded in for an ice cream. What is the maximum number of ice cream that can be obtained from 34 empty bottles?

A. 1 B. 2 C. 3 D. 4 E. 5

23. Clark added 5 numbers together and then divided by 5, which got him 138. If he arranges the number in ascending order, then he adds 3 first numbers and divided by 3, he will get 127. If he arranges the number in the same way, then he adds 3 last numbers and divided by 3, he will get 148. Find the middle number according to that way.

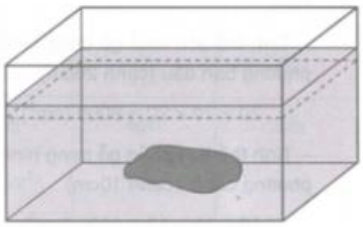
A. 130 B. 135 C. 140 D. 145 E. 150

24. Class 5D has to do a math test, which consists of 3 exercises. The teacher reports to the principal: every student in that class does at least 1 exercise. There are 20 students who did the first exercise, 14 students who did the second exercise, 10 students who did the third exercise, 5 students who did the second and the third exercises, 2 students who did the first and the second exercises, and only 1 student get 10 marks since he did all 3 exercises. How many students are there in that class?

A. 20 B. 30 C. 32 D. 34 E. 36

25. Find a and b such that $\frac{1}{3} = \frac{1}{a} + \frac{1}{b}$

26. A pool which is in the shape of a cuboid has a height, width, and leng of 1.2m, 0.4m, and 0.6m respectively. The water level is a 35cm. After dropping a small statue into the pool, it is estimated that the water level is at 47cm. Find the volume of the statue.



27. Calculate the following sum.

$$\frac{1}{2}+\frac{5}{6}+\frac{11}{12}+\frac{19}{20}+\frac{29}{30}+\frac{41}{42}+\frac{55}{56}+\frac{71}{72}+\frac{89}{90}.$$

28. Find the smallest whole number A such that A gives a remainder of 1 when divided by 2. It also gives a remainder of 1 when divided by 5, a remainder of 3 when divided by 7 and it is divisible by 9.

29. There are three bottles of water M, N, and P.

One of them contains poisonous water while the other two contain pure water.

Bottle M's label reads: "This bottle contains pure water."

Bottle N's label reads: "This bottle contains poisonous water."

Bottle P's label reads: "Bottle N contains pure water."

Only one bottle is labeled correctly.

Which bottle contains poisonous water?

30. Given a number such that it is a 3-digit number, and the hundreds digit and the ones digit are the same. If we multiply this number by 6, the product is also a 3-digit number and in that product, one of the 3 digits is the number 2.