# Đề thi TIMO khối 5 vòng chung kết quốc gia năm 2024

## Logical Thinking / Tư duy logic

1. A store had a box of toy cars. One half but 7 fewer toy cars were sold on the first day. One half of the remaining part but 9 fewer toy cars were sold on the second day. Finally, 20 toy cars are left. How many toy cars did the box contain originally?

*One half: Một nửa; Feuer: Ít hơn; Remaining part: Phần còn lại; Left: Còn lại; Contain: Chứa; Originally: Ban đầu.*

**Key: 30**

2. There are some chickens and rabbits. The number of chickens is 8 less than the number of rabbits. If there are 158 legs in total, how many rabbits are there?

*Chicken: Con gà; Rabbit: Con thỏ; Less than: Ít hơn; Leg: Cái chân; In total: Tổng cộng.*

**Key: 29**

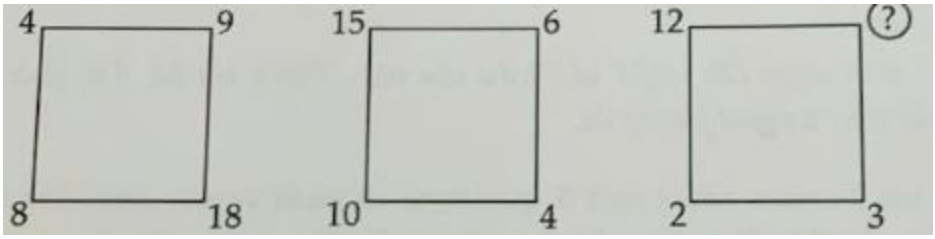
3. It takes 7 people 9 days to complete a task. How many days are required for 3 people to finish the same task?

*Day: Ngày; Task: Công việc; Require: Cần; The same: Giống*

**Key: 21**

4. According to the pattern shown below, what is the missing number?

Pattern: Quy luật; Missing number: Số còn thiếu.




**Key: 18**

5. There are 50 blue balls, 51 red balls and 29 green balls in a bag. At least how many balls should be picked up randomly to ensure there are 3 balls for each colour?

*At least: Ít nhất; Randomly: Ngẫu nhiên; Ensure: Chắc chắn; Each colour: Mỗi màu.*

**Key: 104**

**Arithmetic / Số học**

6. Find the value of 8+15+22+29+...+106+113+120+127.

*Value: Giá trị.*

**Key: 1215**

7. Find the value of

*Value: Giá trị.*

$$\frac{1}{5\times7}+\frac{1}{7\times9}+\frac{1}{9\times11}+...+\frac{1}{31\times33}+\frac{1}{33\times35}.$$

**Key: 3/35**

8. Find the value of

*Value: Giá trị.*

$$\frac{2}{4-\frac{2}{3+\frac{3}{1+\frac{1}{2}}}}.$$



**Key: 5/9**

9. Find the value of

*Value: Giá trị.*

$$\left(\frac{3}{5}+\frac{3}{10}+\frac{3}{20}+\frac{3}{40}\right)\div\left(\frac{7}{2}+\frac{7}{4}+\frac{7}{8}+\frac{7}{16}\right).$$

**Key: 6/35**

10. Find the value of 111×985+555x155+333x80.

Value: Giá trị.

**Key: 222.000**

**Number Theory / Lý thuyết số**

11. Given that $\overline{20B49238A}$ is a 9-digit number which is divisible by 36, find the maximum value of A+B.

*9-digit number: Số có 9 chữ số; Divisible: Chia hết; Maximum value: Giá trị lớn nhất.*

**Key: 17**

12. The sum of 9 consecutive odd numbers is 819. Find the value of the smallest number.

*Sum: Tổng; Consecutive: Liên tiếp; Odd number: Số lẻ; Value: Giá trị; Smallest: Nhỏ nhất.*

**Key: 83**

13. How many 3-digit numbers divisible by 9 or divisible by 13 are there?

3-digit numbers: Số có 3 chữ số; Divisible: Chia hết.

**Key: 161**

14. Define the operation symbol $a \otimes b = \frac{2 \times a \times b}{(b-a)}$, find the value of $12 \otimes (4 \otimes 6)$.

*Define: Định nghĩa; Operation symbol: Ký hiệu phép toán; Value: Giá trị.*

**Key: 48**



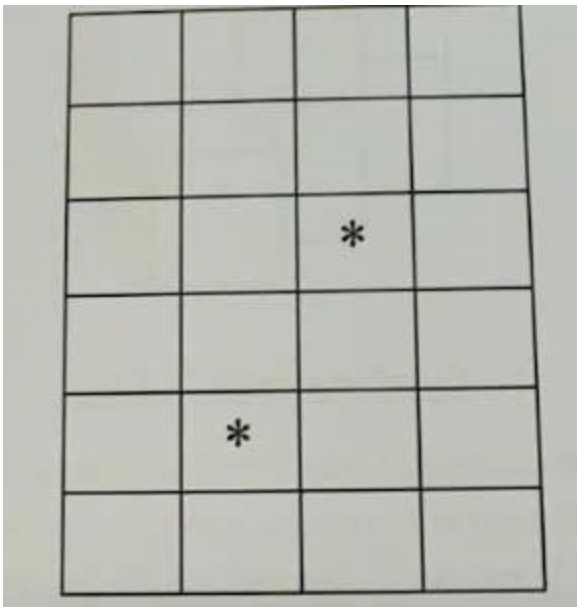
15. Find the unit digit of A given that A=5x8x15x18x...x95x98.

*Unit digit: Chữ số hàng đơn vị.*

**Key: 0**

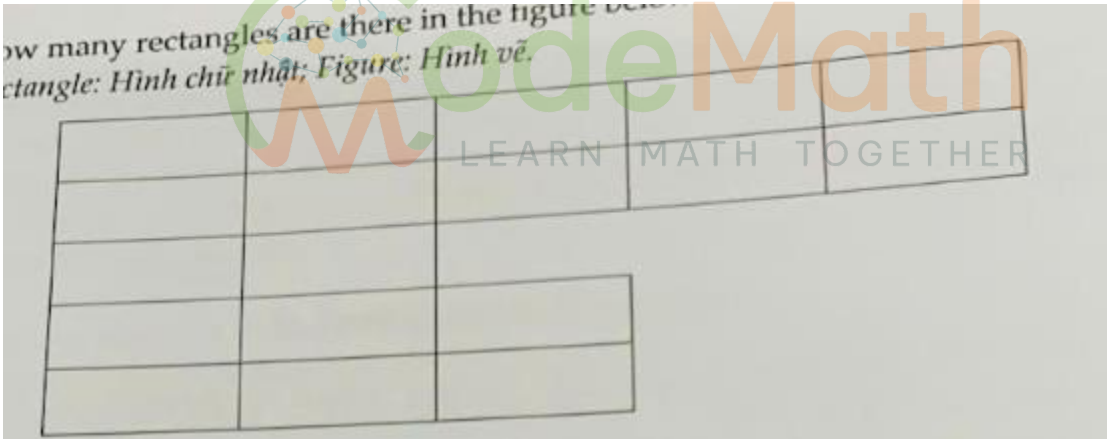
## Geometry / Hình học

16. How many rectangles with both 2 "*" are there in the figure below? Rectangle: Hình chữ nhật; Figure: Hình vẽ.



**Key: 24**

17. How many rectangles are there in the figure below? Rectangle: Hình chữ nhật; Figure: Hình vẽ.




**Key: 90**

18. The area of a rectangle is 315. If side lengths of the rectangle are integers, find the minimum value of the perimeter of the rectangle.

*Area: Diện tích; Rectangle: Hình chữ nhật; Side length: Độ dài cạnh; Integer: Số nguyên, Minimum value: Giá trị nhỏ nhất; Perimeter: Chu vi.*

**Key: 72**

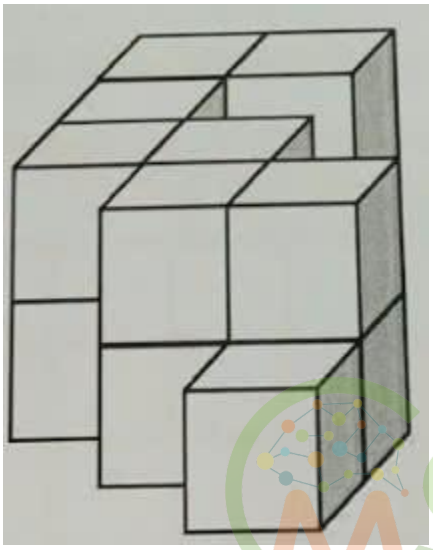
19. How many times is the interior angle of a 15-sided regular polygon as the exterior angle?

*How many times: Gấp bao nhiêu lần; Interior angle: Góc trong; 15-sided regular polygon: Đa giác đều 15 cạnh; Exterior angle: Góc ngoài.*

**Key: 6,5**

20. 15 small cubes with a side length of 1 cm are stacked to get the figure below. Find its total surface area in cm2.

*Small cube: Khối lập phương nhỏ; Side length: Độ dài cạnh; Stacked: Được xếp chồng lên nhau; Figure: Hình vẽ; Total surface area: Diện tích toàn phần.*



**Key: 50**

**Combinatorics / Tổ hợp**

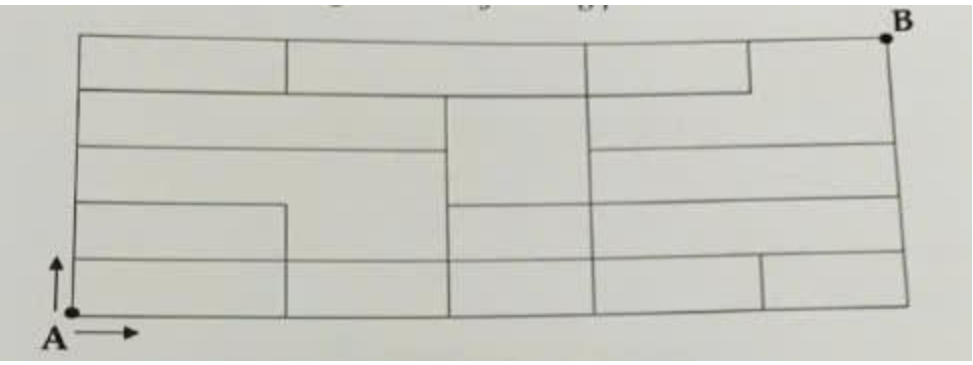
21. 10 students join a competition. Only top 3 students can be chosen to join the next round. How many different ways of choosing 3 students are there?

*Join: Tham gia; Chosen: Được chọn; Different ways: Các cách khác nhau.*

**Key: 120**

22. In how many different ways can Daniel walk from point A to point B following the paths outlined in the figure below given that he can only move up or move right?

Different ways: Các cách khác nhau, Point: Điểm, Path: Đường đi Figure: Hình vẽ; Move *up: Di chuyển lên trên; Move right: Di chuyển sang phải.*




**Key: 46**

23. How many 3-digit even numbers are there such that the product of digits is divisible by 3, greater than 0 and less than 30?

*3-digit even number: Số chẵn có 3 chữ số; Product: Tích; Digit: Chữ số, Divisible: Chia hết; Greater than: Lớn hơn; Less than: Nhỏ hơn.*

**Key: 29**

24. Numbers are drawn from 80 integers 1 to 80. At least how many numbers should be drawn at random to ensure that there are two numbers whose difference is 23?

*Drawn: Được lấy ra; Integer: Số nguyên; At least: Ít nhất; At random: Ngẫu nhiên; Ensure: Chắc chắn; Difference: Hiệu.*

**Key: 47**

25. Choose 3 digits from 1, 3, 5, 4, 6, 9, 0 to form 3-digit numbers. How many even numbers greater than 100 and less than 900 are there? (The repetition of digits is not allowed)

*Digit: Chữ số; 3-digit number: Số có 3 chữ số; Even number: Số chẵn; Greater than: Lớn hơn; Less than: Nhỏ hơn (Các chữ số không được lặp lại).*

**Key: 65**