1. Find the value of $(842,537\times12-840,513\times12)-2,024\times11-1,901$.

2. Emmi bought 135 cookies for 7 baht each. She packed 3 cookies in a box and sold them for 25 baht per box. How much profit does Emmy get?

3. What is the smallest 3-digit natural number divisible by 9 and 12, but divided by 5, the remainder is 2?

4. How many natural numbers, from 245 to 540 divisible by 5 or 8, are there?

5. The smallest natural number divisible by 18 and A is 180, where A is a 2-digit number greater than 50. What is the largest natural number divisible by 18 and A?

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   The smallest natural number divisible by 18 and A is 180, where A is a 2-digit number greater than 50. What is the greatest common divisor of 18 and A?

6. Charlie travels to Phuket by driving a car. On the first day, he was driving $\frac{7}{10}$ of the total distance. On the second day, he drives at the velocity of 90 kilometers per hour and takes 2 hours 46 minutes to arrive in Phuket. How far is Charlie's house from Phuket?

7. If $\frac{a}{15}+\frac{a}{35}+\frac{a}{63}+\frac{a}{99}+\frac{a}{143}=\frac{1}{2+\frac{1}{1+\frac{2}{3}}}$ and a is a prime number, then what is the maximum natural number that is less than a?

8. Ken received $1,200$ baht from his grandfather. He spent 40% of the money to buy shoes and spent the remainder to purchase the T-shirts. After buying shoes and T-shirts, he remained at 612 baht. Find the percentage of the price of the T-shirt to the money received from his grandfather.

9. A teacher has a bag of candies. If she gives 5 children equally, then she has 3 candies left. If she gives 8 children equally, then she has 2 candies left. What is the minimum number of candies that a teacher has?

10. Given the relation

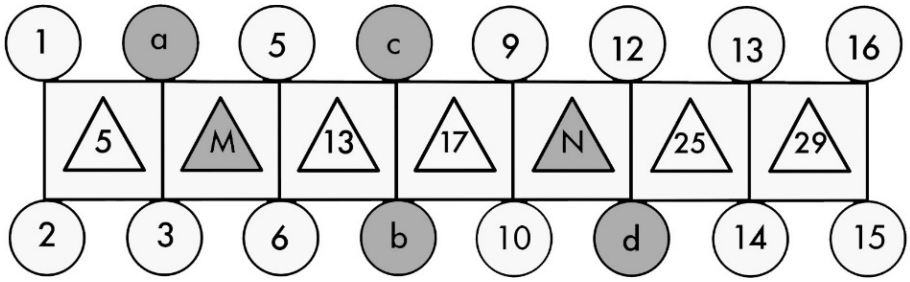
$$5 \boxtimes 3 = 22$$
$$6 \boxtimes 4 = 32$$
$$7 \boxtimes 7 = 42$$
$$10 \boxtimes m = 92$$

If m is the natural number satisfying the above relation, how many prime numbers are less m?

11. If $\left[2\frac{2}{5}+\left(3.42\div\frac{\frac{3}{4}+1\frac{1}{3}}{\frac{5}{6}}\right)-1.768\right]=a$, then find the value of $a+1$.

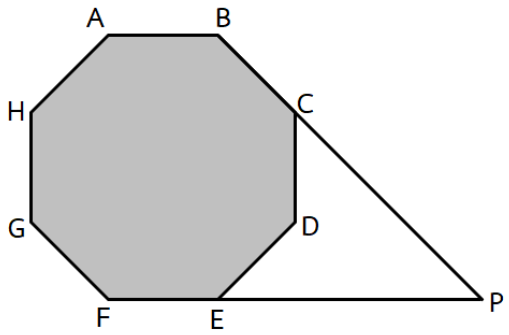
12. In a 100-metre race, Tom allows Jerry to start the race 3 minutes before him. Both reach the finishing line at the same time. Tom takes 2 minutes for this race. What is the average speed of Jerry in meter per minute?

13. Given the pattern below.



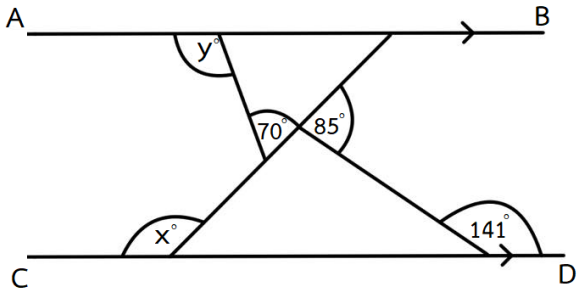
If $a, b, c, d, M,$ and N are natural numbers satisfying the numbers in the pattern above, then find the value of $\frac{a+b+c+d}{M+N}$.

14. Let ABCDEFGH be a regular octagon.



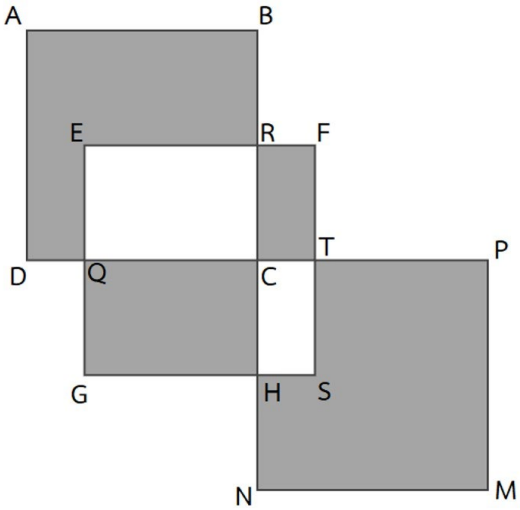
The sides BC and FE are extended to meet at a point P as shown in the above figure. What is the measure of angle CPE?

15. From the diagram below, the line AB is parallel to the line CD.



Find the value of x + y.

16. Let ☐ABCD, ☐EFSG, and ☐CPMN be three rectangular having identical dimensions. These squares are placed on top of each other to form a dodecagon ABRFTPMNHGQD, then color some parts of them, without coloring the overlapping areas as shown in the figure below.



If $\overline{RC} = \frac{1}{2}\overline{PM}$ and the shaded area is 128 square centimeters, then what is the perimeter of the dodecagon ABRFTPMNHGQD?

17. Given three different geometric sharps as the following information:

The 1^{st} shape is the square having a perimeter of 24 centimeters.

The 2^{nd} shape is the rhombus having a perimeter of 24 centimeters.

The height is 2 centimeters shorter than the side length.

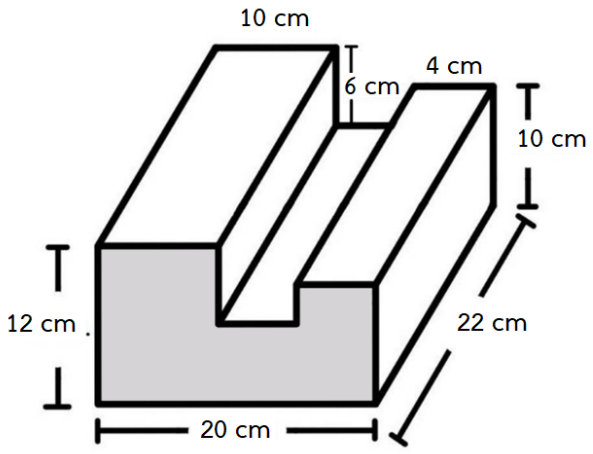
The 3^{rd} shape is the rectangle having a perimeter of 24 centimeters.

The length is 2 centimeters longer than the width.

Sort the numbers of the shapes so that their areas are in ascending order.

(The answer is in form as 3-digits such as 123.)

18. Emmi buys some plasters costing 59 baht per 1 kg bag. She wants to make a prism as shown below.



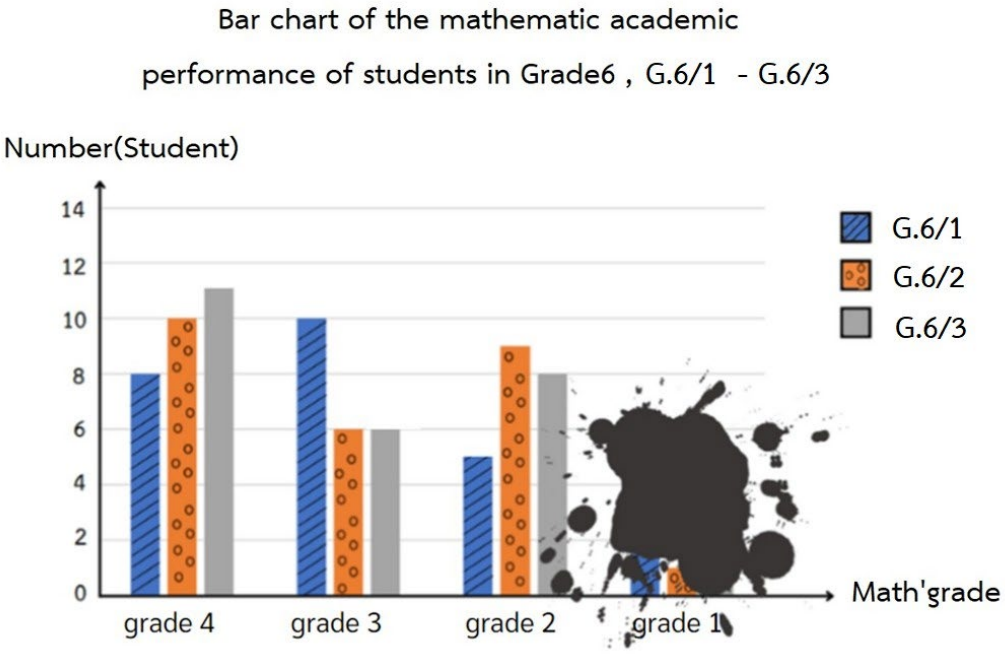
If 1 kilogram of plaster is mixed with the appropriate proportion of water, the volume will be approximately 720 cubic centimeters. How much is the minimum amount of money that Emmi must pay for making the prism?

19. Jonathan's father has kept all his possessions in a safety locker, unlocked by a four-digit code. The code can be entered once a day. His father told him, "Dear son, I shall give you all my treasures on a day when you can solve three puzzles." The descriptions of the three puzzles are as follows:

    1. The 4-digit code is generated from only 3 different digits.
    2. When the 4 digits are arranged as a natural number, the result is a natural number greater than $1{,}000$ and is divisible by 5.
    3. When the 4 digits are arranged as a natural number, the result is divisible by 9.

    From the data above, what is the maximum number of days he needs to open the safety locker?

20. A teacher creates the bar chart of the mathematics academic performance of students in Grade 6 (G.$6/1$ to G.$6/3$) as shown in the figure below.



The bar chart is smeared in some parts with ink. Some information is missing. However, a teacher can remember some details. There are 3 rooms, namely, G.$6/1$, G.$6/2$, and G.$6/3$, respectively. The number of students in 3 rooms is equal to 80 students. The number of students who get Grade 1 in G.$6/1$ is greater than those who get Grade 1 in G.$6/2$ but less than those who get Grade 1 in G.$6/3$. How many students who get Grade 1 in G.$6/1$ are there?

21. In a cafe, the ratio of kids and adults is $2:3$. If there are 6 girls that is equal to 15% of kids, then how many adult are there?

22. From the pattern below,

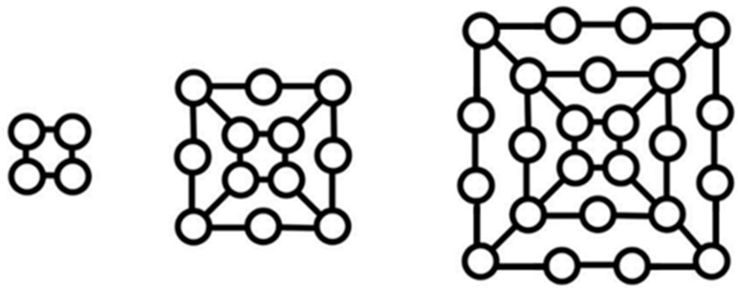
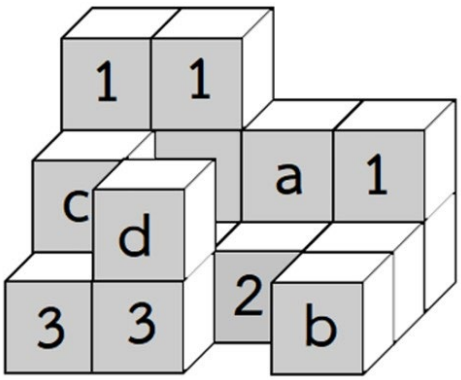


Figure 1 **Figure 2** **Figure 3**

How many circles ○ are there in Figure 18?

23. From the figure below,



if a, b, c, and d are natural numbers so that the numbers on the cubes have some relation to the number of cubes, then find the value of $a - b + c \times d$.

24. How many 3-digit numbers can be formed from the digits $0, 2, 3, 7,$ and 8, if each digit is different and their values are between 230 and 870?

25. If the letters in the word "ASMOPSS" are rearranged without the meaning, how many numbers of words are there such that only two letters "S" are consecutive?

GRADE 6 ANSWER KEY

No.	Answer	No.	Answer
1	123	14	45
2	180	15	250
3	252	16	64
4	90	17	231
5	6	18	354
6	830	19	80
7	2	20	2
8	9	21	60
9	18	22	684
10	4	23	2
11	3	24	41
12	20	25	480
13	1		

***หมายเหตุ ข้อ 5 คณะกรรมการตัดสินให้คะแนนฟรี เนื่องจากโจทย์ภาษาอังกฤษไม่สมบูรณ์