1. Find the value of $21 - 22 + 23 - 24 + 25 - 26 + \ldots + 117 - 118 + 119$.

2. If the greatest common divisor (GCD) of 572 and $1,612$ is "a", then what is the least common multiple (LCM) of "a" and 78?

3. Let $\frac{28,000,000\ x\ 600,000}{0.0000021} = A\ x\ 10^n$ where $1 \leq A < 10$ and n is integer. What is the value of $\frac{2n}{A}$?

4. Let $\frac{2^3 x\ (-2)^6 x\ 4^4}{(-8)^4 x\ 32} = 2^a$. What is the value of $2a + a^{2024}$?

5. Let $a = 2, b = -4$ and c be integer satisfying that $\frac{a^4 - 2b - c}{2}$ is between -4 and 8. How many possible numbers can integer c be?

6. In ASMOPSS THAILAND 2024 competition, there are 23,850 students registered. The ratio of male students to female students is 2 : 3. In the exam day, 240 male students and some female students are absent. It is found that the ratio of male students to female students is 31 : 47 on the exam day. How many female students are absent?

7. Jong and Kallen have 20,000 dollars in total. They plan their expenses to travel to "Koh Lan" as follows:
   - Taxi (One way between home and port) 150 baht/person,
   - Boat (One way between port to Koh Lan) 60 baht/person,
   - Hotel (only one room needed) 2,800 baht/night,
   - Food 4,350 baht/person,
   - Activities 450 baht/person,
   - Others 2,500 baht/person,

   If they go to Koh Lan an the morning of August 3, 2024 and return on the afternoon of August 3, 2024, the remaining money is what percent of the money before the trip?

8. If the remainder of dividing 2^{25} by 7 is a then what is the value of a^2+3a-1?

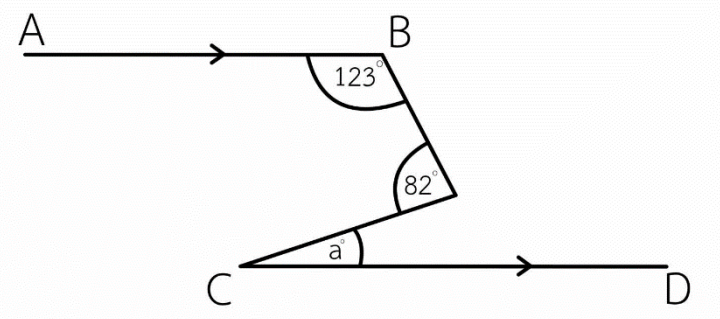
9. Let a, b and c be distinct prime numbers satisfying that

$$a^2 + b^2 = 53,$$
$$b^2 + c^2 = 170,$$
$$c^2 + a^2 = 125.$$

Find the value of $a - [(-b) \times c]$.

10. Let a and n be prime numbers and $a > n$. If $2^4 a^{n-2} = 5,488$ then what is $a + n$?

11. In the diagram, let $\overline{AB} // \overline{CD}$. What is a?



12. In the figures, let the volume of each box be the same. What is the length of the base of the box in figure 2?

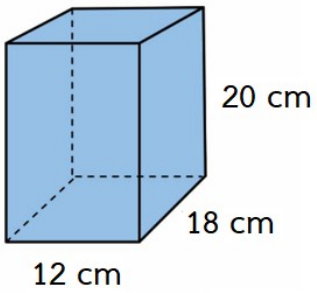


Figure 1

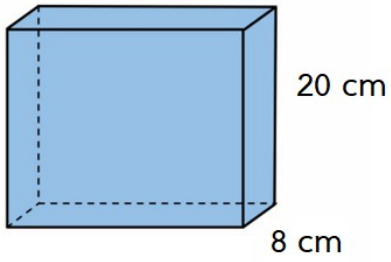
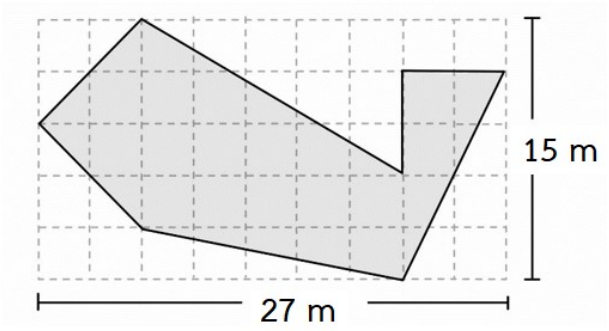
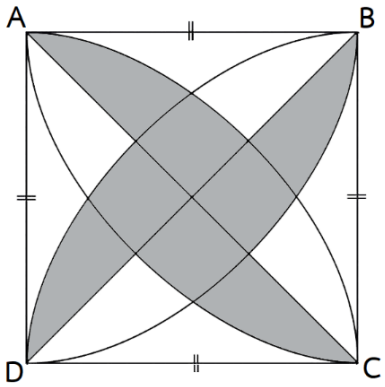


Figure 2

13. In the figure, what is the area of the shaded shape?



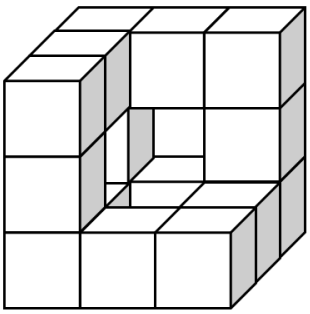
14. In the figure, the square $ABCD$ has area of 441 square centimeters. Find the shaded area. ($\pi = 3.14$)



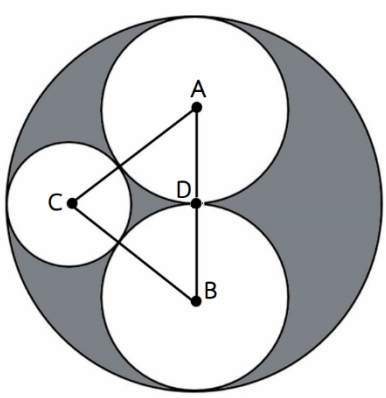
15. Jane has landed in the shape of a circle with an area 784π square meters. She builds a field in the shape of square such that it has the greatest area in her land. What is the remaining area of the land? ($\pi = \frac{22}{7}$)

16. A triangle has sides with length $6, 8,$ and a where a is an integer. Among all possible a, what is the sum of the maximum and the minimum?

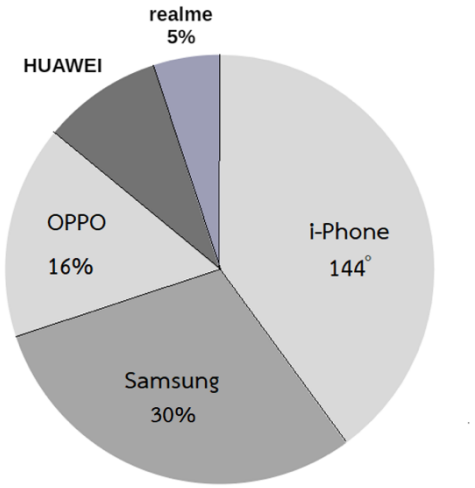
17. Lisa arranges 16 cubes with the size of 64 cubic centimeters each as in the figure. If Lisa paints every part of this shape including the bottom, what is the area of the painted part in square centimeters?



18. In the figure, let the circumference of circle D be 132 centimeters, circles A and B have the same area. The ratio of the radius of circle A to circle C is $3:2$. If circle C has an area of x square centimeters and a circumference of y centimeters, what is $x+y$? $(\pi = \frac{22}{7})$



19. The pie chart shows the numbers of cellphones sold by brand in a store in July.



The store sells 72 HUAWEI cellphones and sells I-Phones as displayed in the percentage of the total numbers of I-Phones sold in the table.

Brand	I-Phone15	I-Phone14	I-Phone13	I-Phone12	Other
Sales	a	25%	20%	10%	30%

How many I-Phone 15 sold in July for this store?

20. If the digits 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 are arranged to form 3-digit number with the conditions:

- All digits of the number are different
- The number is divisible by 4
- The number is divisible by 9

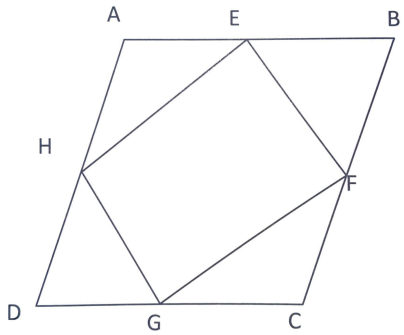
How many possible 3-digit numbers are there?

21. Find the sum of all digits of $1^2 + 11^2 + 111^2 + 1111^2 + 11111^2$.

22. A group has 6 people: Adam, Bob, Charlie, David, Jackson, and Laula. They go to the cinema. Adam and Laula have 20% discount tickets. Bob, Charlie, and Jackson have 40% discount tickets. Jackson pays 108 baht for his tickets. How much do all tickets cost?

23. One dimension of a cube is increased by 1, another is decreased by 2 , and the third is left unchanged. The volume of the new rectangular solid is 48 less than that of the cube. What was the surface of the new rectangular solid?

24. In the below figure, the area of a parallelogram ABCD is 937.5 m^2 and E, F, G, H are the midpoints of AB, BC CD, DA respectively. Find the area of triangle EFG. (Give your answer in m^2.)



25. The main menu of a restaurant consists of 4 a la carte food, 3 soups, and 5 drinks.

A restaurant has a promotion " Special Lunch Set 99" for lunchtime.

There are 3 sets as follows:

Set 1: Rice with 2 a la carte food, and 1 drink;

Set 2: Rice with 1 a la carte food, 1 soup, and 1 drink;

Set 3: Rice with 2 a la carte food, and 1 soup.

Note that, for each choice, the customer can choose a la carte food, soup and drink from the main menu.

If James has lunch at this restaurant, how many ways can he select when he chooses Special Lunch Set 99?

GRADE 7 ANSWER KEY

No.	Answer	No.	Answer
1	70.00	14	251.37
2	156.00	15	896.00
3	4.50	16	16.00
4	0.00	17	960.00
5	23.00	18	198.00
6	210.00	19	48.00
7	22.80	20	10.00
8	9.00	21	28.00
9	79.00	22	792.00
10	12.00	23	188.00
11	25.00	24	234.38
12	27.00	25	108.00
13	207.00		