1. A large bag of candy was shared by a group of friends. It was found that $\frac{1}{4}$ of the total number of candies were chocolate bars and $\frac{1}{3}$ were fruit chews. Their friend Miguel ate 21 lollipops. None of the other 4 friends in the group had more than 2 pieces of candy each.

What was the total number of candies eaten by the other 4 friends?

A) 3
B) 2
C) 4
D) 5

(Correct +3, Wrong 0, Blank 0)

2. When three positive integers $a, b,$ and c are multiplied together, their product is 36. Suppose $a < b < c$ **In how many ways can the numbers be chosen?**

A) 3
B) 5
C) 4
D) 2

(Correct +3, Wrong 0, Blank 0)

3. A recipe for making 3 pans of fudgy brownies requires 4 cups of flour, $\frac{1}{2}$ cup of cocoa powder, and 3 cups of chocolate chips. Leo has 14 cups of flour, 2 cups of cocoa powder, and 10 cups of chocolate chips.

Assuming he has enough of the other ingredients like eggs and sugar, **what is the greatest number of pans of brownies he can make?**

A) 10
B) $11\frac{1}{3}$
C) $10\frac{1}{2}$
D) 9

(Correct +3, Wrong 0, Blank 0)

4. In a class, there are 12 boys and 8 girls. Two students are chosen randomly.

Find the probability that at least one girl is chosen.

A) $\frac{48}{95}$
B) $\frac{62}{95}$
C) $\frac{37}{95}$
D) $\frac{73}{95}$

(Correct +3, Wrong 0, Blank 0)

5. The total price of 3 pens and 2 pencils is Rp17,000. The price of 1 pen is Rp1,000 more than the price of 1 pencil.

What is the price of a single pen?

A) Rp3,800
B) Rp4,800
C) Rp5,800
D) Rp6,800

(Correct +3, Wrong 0, Blank 0)

6. A geometric sequence has $a = 5$ and $r = \frac{3}{2}$. (a is the first term and r is the ratio)

The sum of the first four terms is ____.

A) 11
B) $\frac{217}{19}$
C) $\frac{123}{11}$
D) $\frac{325}{8}$

(Correct +3, Wrong 0, Blank 0)

7. A regular polygon (n-sided) has an interior angle that is 7 times larger than its exterior angle.

How many sides (n) does the polygon have?

A) 16
B) 14
C) 15
D) 12

(Correct +3, Wrong 0, Blank 0)

8. Let $S(N)$ be the sum of the digits of the number N. (Example: $S(123) = 1 + 2 + 3 = 6$).

If N is an integer, **what is the amount of possible number N that satisfies the equation $N + S(N) = 1000$?**

A) 1
B) 2
C) 4
D) 0

(Correct +3, Wrong 0, Blank 0)

9. **What is the remainder when $7^{45} - 1$ is divided by 10?**

A) 6
B) 5
C) 4
D) 7

(Correct +3, Wrong 0, Blank 0)

10. Leo finished a 100-page book in five days. Each day, he motivated himself by reading six more pages than the day before.

How many pages did Leo read on the fifth day?

A) 22
B) 20
C) 32
D) 34

(Correct +3, Wrong 0, Blank 0)

11. Determine the largest possible integer n such that $750!$ is divisible by 15^n

A) 185
B) 186
C) 188
D) 187

(Correct +3, Wrong 0, Blank 0)

12. The security team has captured five suspected spies.

They know that three of them are from Agency X ("Red") and the other two are from Agency Y ("Green").

The interrogator questions them one by one.

The mission is considered successful and the interrogation stops as soon as they have identified all three spies from Agency X or both spies from Agency Y.

What is the probability that the security team identifies all three spies from Agency X?

A) $\frac{2}{10}$
B) $\frac{3}{10}$
C) $\frac{2}{5}$
D) $\frac{3}{5}$

(Correct +3, Wrong 0, Blank 0)

13. The quadratic function curve $f(x) = 2x^2 - 20x + k$ touches the line $y = 35$.

What is the value of the constant k?

A) 15
B) 85
C) 35
D) 50

(Correct +3, Wrong 0, Blank 0)

14. A **solid ice sphere** is perfectly cut into **two identical halves** by a flat plane passing through its center. Each half is then **coated with a thin layer of chocolate** on all of its surfaces.

If the ratio between the **total surface area of the two halves** and the **surface area of the original sphere** is $p : q$,
where p and q are **relatively prime**,

find the value of $p + q$,

A) 10
B) 7
C) 5
D) 13

(Correct +3, Wrong 0, Blank 0)

15. Two numbers a and b have **8** and **10** distinct prime divisors, respectively.
If a and b share exactly **4** common prime divisors, **what is the minimum number of distinct prime divisors of $a \times b$** ?

A) 18
B) 12
C) 19
D) 14

(Correct +3, Wrong 0, Blank 0)

16. **Find for x :**

$$2(x - 3) - 4(2x + 1) = 3(1 - x)$$

A) $-\frac{13}{3}$
B) $\frac{7}{5}$
C) $\frac{9}{4}$
D) $-\frac{17}{8}$

(Correct +3, Wrong 0, Blank 0)

17. A function $F(n)$ is defined for integers $n \geq 1$ as follows:

$F(1) = 3$

$F(100) = 201$

$F(n) = 2F(n-1) - F(n-2)$ for $n > 2$.

What is the value of $F(2025)$?

A) 4051
B) 4052
C) 4049
D) 4050

(Correct +3, Wrong 0, Blank 0)

18. Alice, Bob, Charlie, David, Eve, and Frank are going to the movies and will sit in a row of 6 adjacent seats. However, Alice and Bob recently had an argument and refuse to sit next to each other.

How many different seating arrangements are possible?

A) 600
B) 540
C) 480
D) 550

(Correct +3, Wrong 0, Blank 0)

19. A cone with radius of the base R and height of $R\sqrt{3}$ is inscribed in a sphere in a way that the tip of the cone and circumference of its base touch the surface of the sphere. Another sphere is incribed inside the cone such that it is the sphere with maximum volume that can be inscribed in the cone.

What is the ratio of volume of bigger sphere compared to smaller sphere?

A) $\sqrt{3}$
B) 2
C) $2\sqrt{2}$
D) $2\sqrt{3}$

(Correct +3, Wrong 0, Blank 0)

20. Two planets, Xylos and Yarrow, orbit a star in the same direction and on the same plane. They begin perfectly aligned. Xylos, the inner planet, completes an orbit every 2 years. Yarrow, the outer planet, is slower and completes an orbit every 3 years.

How many orbits will Xylos have completed when it first "laps" Yarrow?

A) 6
B) 2
C) 5
D) 3

(Correct +3, Wrong 0, Blank 0)

21. A square $PQRS$ is inscribed in a semicircle. Points P and Q are on the diameter of the semicircle, while points R and S are on the arc of the semicircle.

If the radius of the semicircle is 10 units, **what is the area of square $PQRS$?**

(Correct +4, Wrong 0, Blank 0)

22. **How many positive integers n exist such that the value of**

$n^2 - 10n + 21$ is a prime number?

(Correct +4, Wrong 0, Blank 0)

23. If p, q, r are prime numbers that satisfy the equation $p^2 + q = r^2$, **find the value of $p + q + r$**

(Write your answer only in numbers.)

(Correct +4, Wrong 0, Blank 0)

24. How many subsets of two elements can be removed from the set $S = \{1, 2, 3, \ldots, 15\}$ so that the mean (average) of the remaining numbers is 8?

(Correct +4, Wrong 0, Blank 0)

25. **Find the value of y that satisfies the following system of equations.**

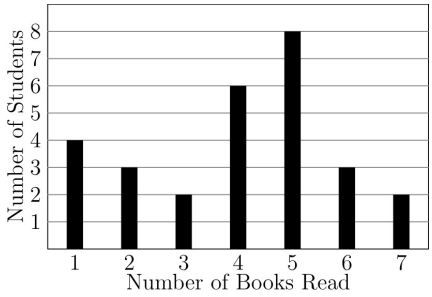
$$3x + 4y = 23$$

$$2x - y = 8$$

(Write your answer in numbers only.)

(Correct +4, Wrong 0, Blank 0)

26. A teacher asked her students how many books they finished last month. The survey results are summarized in the following bar chart, where the height of each bar represents the number of students.



What is the mean number of books read by students in the class?

(Correct +4, Wrong 0, Blank 0)

27. **What is the remainder of $5 \cdot (7^6 + 1) + 3$ divided by 4?**

(Write your answer only in numbers.)

(Correct +4, Wrong 0, Blank 0)

28. From the digits $1, 2, 3, 4, 5, 6,$ three-digit numbers are formed using different digits.

How many three-digit numbers are divisible by 5?

(Correct +4, Wrong 0, Blank 0)

29. $ABCDE$ is a regular pentagon. A point F lies inside the pentagon such that $\triangle FCD$ is an equilateral triangle.

Find the magnitude of $\angle AFB$ in degrees.

(Correct +4, Wrong 0, Blank 0)

30. **Determine the greatest number whose digits are all different and whose sum of digits equals 16.**

(Correct +4, Wrong 0, Blank 0)

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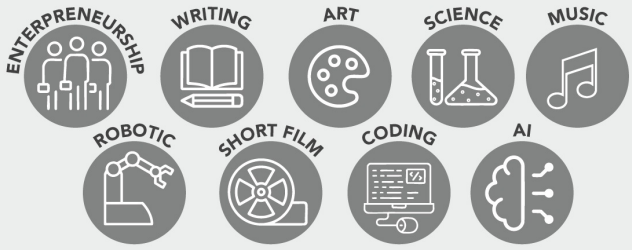

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Answer Keys

No	Key	Code
1	C	KMF/4798/E8UZZ
2	C	EMC/4802/WTGCG
3	A	EMC/4799/54MKN
4	B	KMF/4705/MI7Z9
5	A	KMF/4917/3IDN8
6	D	KMF/4702/FGMQD
7	A	KMF/4934/XLWSI
8	A	KMF/4933/3TCZI
9	A	KMF/4703/DZXJZ
10	C	KMF/4794/M1LE8
11	D	KMF/4797/RKFBK
12	C	KMF/4750/UBNEL
13	B	KMF/4935/JVC70
14	C	KMF/4910/W5YPE
15	D	KMF/4781/UI7SV
16	A	KMF/4701/D30AB
17	A	KMF/4932/PKUJJ
18	C	EMC/4801/ZUKAH
19	B	KMF/4938/RNLEI
20	D	KMF/4751/VFP46