

1) Simplify: $\frac{2x}{x^2-9} + \frac{3}{x+3}$

A) $\frac{2x + 3x - 9}{x^2 - 9}$

B) $\frac{2x + 3(x+3)}{(x-3)(x+3)}$

C) $\frac{2x + 3x + 3}{x^2 - 9}$

D) $\frac{2x - 3(x+3)}{x^2 - 9}$

2) What is the value of $2^4 * 4^{-1} * 8^{-2}$?

A) $\frac{1}{128}$ B) $\frac{1}{64}$ C) $\frac{1}{4}$ D) $\frac{1}{16}$

3) Find the value of x and y.

$2x + 3y = 4$

$4x - y = 8$

A) $x=2, y=3$

B) $x=2, y=0$

C) $x=3, y=2$

D) No solution

4) A train zooms down the tracks at 60 km/h for 2 hours and 40 minutes. How far does it travel?



- A) 120 km B) 130 km
C) 140 km D) 160 km

5) A mystery number added to its own square gives 56. What is the number?

- A) 6 B) 7 C) 8 D) 5

6) Given $f(x) = x^2 - 2x + 3$, find $f(3) + f(-1)$

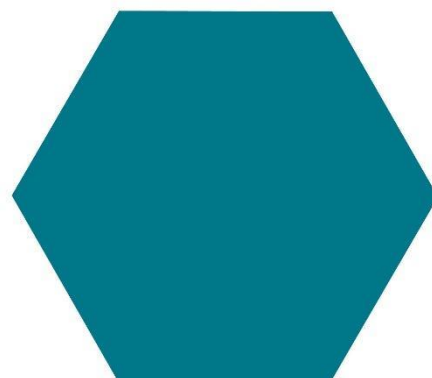
- A) 14 B) 16 C) 12 D) 10

7) A password contains 2 letters (A-Z) followed by 2 digits (0-9). How many possible passwords?



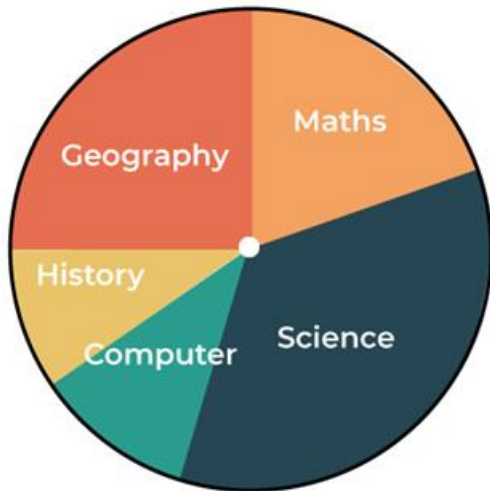
- A) 67600 B) 2600 C) 5200 D) 100000

8) What is the sum of all interior angles of a regular hexagon?



- A) 540° B) 720° C) 900° D) 360°

9) If Science makes up 25% of a pie chart, what is the central angle?



A) 45° B) 90° C) 60° D) 30°

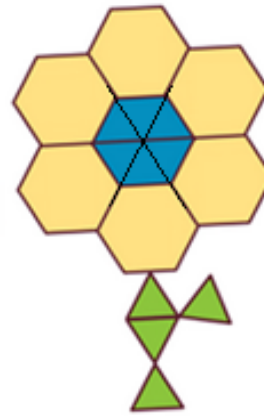
10) Complete the pattern:

2, 6, 12, 20, ?, 42

A) 28 B) 30 C) 32 D) 34

11) In the enchanted realm of Geometria, magical triangles and hexagons are crafted from shimmering crystal. Every triangle glow with a mystical energy equal to 4 cm² of area. The wise geomancers have placed a special pattern on an ancient tablet—formed using only these two sacred shapes.

If each triangle has an area of 4 cm² and all hexagons are identical, what is the total magical area of the figure shown below?



A) 46 B) 184 C) 160 D) 230

12) With the given rules, solve:

$$a \spadesuit b = \frac{a + b}{2}$$

$$a \clubsuit b = 3 \cdot (a + b)$$

$$a \spadesuit b = \frac{a^2 + b^2}{3}$$

$$(7 \spadesuit 21) \clubsuit (3 \spadesuit 6) = ?$$

A) 14 B) 29 C) 87 D) 92

13) In a riddle chamber, a function obeys the rule:

$$f(x) + f\left(\frac{1}{x}\right) = 5 \text{ for all } x \neq 0$$

If $f(2) = 1$, what is $f\left(\frac{1}{2}\right) = ?$

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

14) Solve for x:

$$\sqrt{x + 9} - \sqrt{x} = 3$$

- A) 0
- B) 3
- C) 6
- D) 9

15) IMEC held its Global Round in Dubai from 13–17 June 2025. The opening ceremony was on 13 June 2025 – a Friday, full of fanfare and futuristic dreams.

• But if a time traveler from 2026 wants to attend the next ceremony on 13 June 2026, what day of the week will they land on?



- A) Friday
- B) Saturday
- C) Sunday
- D) Monday

16) The sequence goes like this:
IMEIMECIMECIMEIMECIMEC...

(repeating pattern)

What letter lies at the 2025th position in this infinite inscription?

• If this pattern continues infinitely, what letter will be in the 2025th position?

- A) I
- B) M
- C) E
- D) C

17) According to the given rule, find $a + b + c = ?$

	a	b	c
2		16	
3	21		
4			36
5		40	
8	56		72

- A) 24
- B) 28
- C) 30
- D) 35

18) Today 9th of July Wednesday. What day of the week will be 1st January 2026?

- A) Sunday
- B) Monday
- C) Tuesday
- D) Wednesday

19) Smallest number that leaves remainder 1 when divided by 2, 3, 4, 5, 6 but divisible by 7:

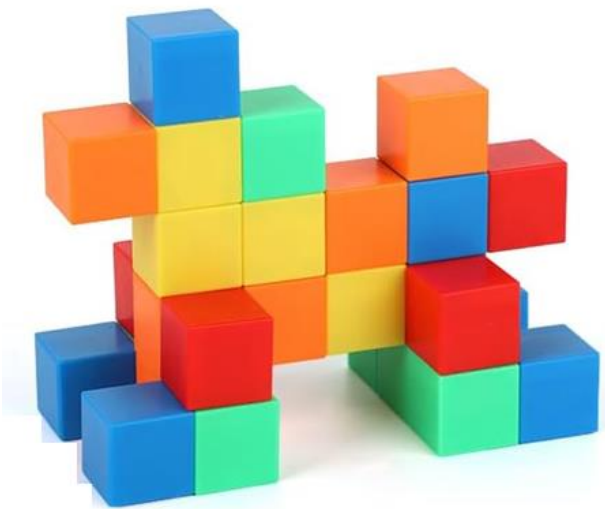
- A) 301
- B) 721
- C) 421
- D) 181

20) A train 150m long passes a pole in 12s. Speed in km/h?



- A) 30 **B) 45** C) 50 D) 75

21) How many small cubes are there?



- A) 24 **B) 28** C) 30 D) 31

22) From the given rule, solve this.

$6 \square 4 \Rightarrow 20$

$4 \square 3 \Rightarrow 7$

$4 \square 2 \Rightarrow 12$

$9 \square 8 \Rightarrow ?$

- A) 8 B) 13
C) 17 D) 34

23) The sum of two numbers is 132. If twice the smaller number is equal to the larger number minus 12, what is the larger number?

- A) 80 B) 88
C) 92 D) 96

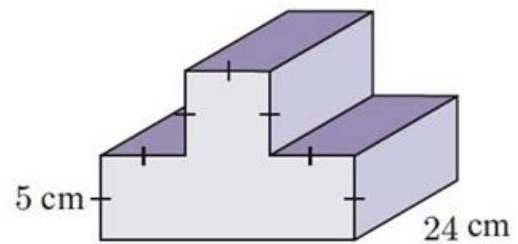
24) In a forgotten scroll of math legends, the following alternating pattern of factorials appears:

$1! - 2! + 3! - 4! + 5!$

What is the total magical value of this sequence?

- A) 96 B) 100
C) 101 D) 120

25) Find half of the surface area of this figure?



- A) 96 cm^2 B) 400 cm^2
C) 600 cm^2 D) 720 cm^2