

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	U
					<p>1 Let m and n be odd with $m > n$, what is the largest integer that divides $m^2 - n^2$?</p>	2
<p>3 Solve in \mathbb{N}: $\text{alog}2 + \text{blog}3 + \text{clog}5 = 2022$</p>	<p>4 Let $a, b \in \mathbb{R} \mid a > 1, b \neq 0$. If $ab = a^b \text{ y } \frac{a}{b} = a^{3b}$ Calculate b^{-a}</p>	<p>5 In a quiz there are three multiple-choice questions with three answers to each question of which only one is correct. A contestant answers at random, what is the probability that he gets at least two right?</p>	<p>6 Two of the medians of a triangle are \perp and measure 8 and 12 cm. Find the area of the triangle</p>	<p>7 What is the area of the regular dodecagon (twelve sides) circumscribed to a square of area 2 dm^2?</p>	<p>8 </p>	9
<p>10 In the attached figure find AD as a function of θ.</p>	<p>11 Two rays starting from O make an angle of 30° between them. Points A and B are, each one of them, in each of the rays, fulfilling that $AB = 1$. What is the maximum possible length of OB?</p>	<p>12 </p>	<p>13 Solve in \mathbb{N}: $n^4 + 6n < 6n^3 + n^2$</p>	<p>14 Dani has three questions left to answer to finish an exam. Each question has five alternatives of which only one is correct. If she randomly answers these three questions, what is the most likely number of correct answers?</p>	<p>15 How many positive integers less than 2023 verify that any of their digits is zero?</p>	16
<p>17 The key that I put in the lock of my locker has four figures and only two are odd. How many keys meet these requirements?</p>	<p>18 Finding the natural greatest less than 1000, with four different prime divisors.</p>	<p>19 I have 18 cards and on each one I have written a 4 or a 5. The sum of all the numbers written is divisible by 17. How many is the 4 written on?</p>	<p>20 Solve in \mathbb{R}: $\begin{cases} ab = 26 \\ ac = 128 \\ bc = 52 \end{cases}$</p>	<p>21 </p>	<p>22 </p> <p>Two circles of radius 2 and centers A and B intersect at C and D. If ACBD is a square, find the area of the red zone</p>	23
<p>24/31 In the rectangle in the figure, segment AB measures 3 cm and segment BC measures 4 cm. If E is the foot of the perpendicular from point B to diagonal AC, what is the area of triangle $\triangle AED$?</p>	<p>25 </p>	<p>26 Find the two-digit numbers that satisfy that the product of their digits plus the sum of both coincides with the number.</p>	<p>27 Two of the altitudes of a scalene triangle measure 4 and 12 cm. If the length of the third height is a natural, what is the maximum value of it?</p>	<p>28 A convex polygon has exactly three obtuse angles. What is the maximum number of sides of this polygon?</p>	<p>29 Solve in \mathbb{R}: $x - 2x + 1 = 3$</p>	30