
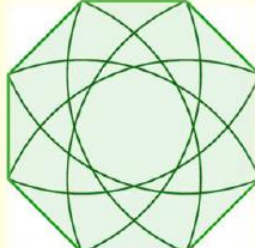
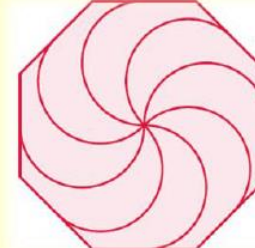

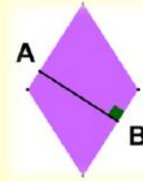

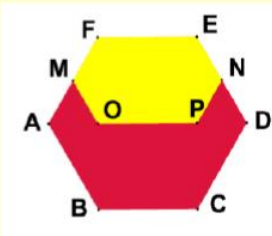

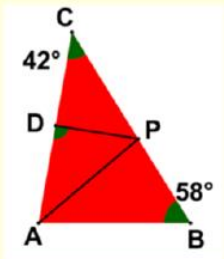


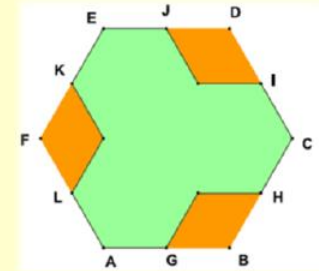

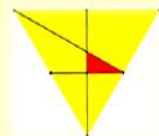

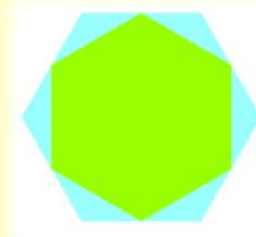






DECEMBER

MONDAY	TUESDAY	WEDNESDAY
		
5 A ladder 25 m long is leaning against a vertical wall so that the foot of the ladder is 7 m from the wall. If we put it back, now the highest point of the ladder is 4 m lower than before, how far will the foot of the ladder be from the wall now?	6 	7 In the figure there is a regular hexagon ABCDEF of area 180 cm ² . M and N are the midpoints of AF and ED, respectively. Also, MO AB; OP BC; PN CD y MO = MF = PN. Find the area of the octagon ABCDNPOM
12  The perimeter and area of the rhombus is 24 cm and 24 cm ² . Calculate the length of the segment AB	13 Calculate the smallest n ∈ ℕ such that 2 ⁸ + 2 ¹¹ + 2 ⁿ is a perfect square 	14 
19 The acute triangle ΔABC has the angle at B of 58° and at C of 42°. Also, the bisector at A intersects the opposite side at P. In triangle ΔAPC, the bisector at P intersects the opposite side at D. Find the measure of the angle ∠PDA	20 	21 Two runners A and B leave, at the same time, from a city X to another Y, which is 30 km away. Runner A is going 4 km/h less than Runner B. When B reaches Y, he turns around and finds A 6 km from Y. What is the speed of runner A?
26 	27 The letters x, y, and z represent nonzero digits. Find the number xyz knowing that the sum is well done.  $\begin{array}{r} x \ x \\ y \ y \\ + z \ z \\ \hline z \ y \ x \end{array}$	28 We have 8 cards with the numbers 2 ⁰ , 2 ¹ , 2 ² , 2 ³ , 2 ⁴ , 2 ⁵ , 2 ⁶ y 2 ⁷ . Laia takes a few and Aitana the rest. The sum of those of Laia exceeds the sum of Aitana by 31. How many cards did Laia take? 

THURSDAY	FRIDAY	SATURDAY	U
1 	2 Let G, H, I, J, K and L be the midpoints of the sides of the regular hexagon ABCDEF, with area 36 cm ² . Find the area of the green dodecagon with parallel sides four to four	3 To what exponent must we raise 8 to obtain 16 ²¹ ? 	4
8 In the equilateral triangle in the figure, we have marked the midpoints of the sides. What fraction of the triangle does the red triangle occupy? 	9 	10 Dani plays with 5 ABCDE cards to mix them up as follows. Change 1: he takes the card from the centre and puts it first: CABDE. Change 2: he takes the last card and puts it in the middle: CAEBD. Change 3 equals change 1. Change 4 equals change 2, and so on. When making the 2022 change, how have the cards been ordered?	11
15 	16 We inscribe in a regular hexagon another regular hexagon whose vertices are the midpoints of the sides of the first. What is the ratio between the areas of the hexagons?	17 	18
22 Dani's father is triple Dani's age. If we add the two figures of the father's age with the two figures of Dani's age, we obtain Dani's age. In addition, the sum of the two digits of the father's age is equal to the sum of the two digits of Dani's age. Calculate the age of both.	23 Of the naturals a and b it is known that a + b ends in 1 and that a ² + b ² ends in 3. In what number does a ²⁰²² + b ²⁰²² ? 	24 On top of a white square, an orange one whose side measures 2 cm less than the white one has fallen on top, as indicated in the figure. If the surface of the white area of the figure is 36 cm ² , how many cm is the orange square?	25
29 	30 Aitana takes 24 minutes to complete a certain task, while her nephew Noa takes 3 hours. If they work together, how long will it take them to do the task 51 times? 	31 When a barrel is 30% full, it contains 30 liters less than when it is 70% full. How many liters does the full barrel contain? 