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Answers

Step 1: The splendid Romane

Answer => There are 64 bays in the arcade.

Step 2: The heart of the city

Answer => The point to find is the leveling plate altitude of 143.50 meters.

Step 3: A famous mathematician

Answer => The difference between the two leveling plates is 0.

Step 4: At the water's edge, Dame Garonne

Answer 1 => v = qv/S = 0.525 m/sec or 1.89km/h (must multiplied by 3.6 to convert!)
t= 325/1.89= 172 hours or a little more than 7 days! (not very fast right?)

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Answer 2 => Volume of the dome = (Volume sphere/2) + Volume Cylinder

Cylinder volume = base area * height
= $(12^2 * \pi) \times 55$
= $144 * \pi * 55$
= $24868.80\ m^3$

Volume 1/2 sphère = $(4/3 * \pi * r^3) / 2$
= $(4/3 * \pi * 1728) / 2$
= $7234,56 / 2$
= $3617.28\ m^3$

therefore total volume of the building
= 24868.80 + 3617.28
= $28486.08 m^3$

Answer 3 => The Pont-Neuf has 7 arches. It is indeed a prime number.

Step 5: A pastel-coloured home

Answer => example of geometric shapes found on the facade.

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Step 6: The Fine Arts meeting

Answer => The hidden number is 5 in Roman numeral V.

Step 7: A curiosity

Answer => the area is 10.25 m^2

Calculate the area of the square, then that of the 4 triangles and finally the area of the octagon.
According to the coding we have :
KL = JI = HG = EF and DK= DJ = IC= CH= GB= BF= EA= AL
where KL = 1.5m and DK = 1m

one side of the square = DK+KL+LA = 1 + 1.5 + 1 = 3.5m
so the area of the square = 3.5 * 3.5 = 12.25m^2

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We then calculate the area of one of the right-angled triangles:
Area of DKJ = (1*1)/2 = 0.5m^2
Then we calculate the area of the 4 triangles:
Area of the 4 triangles = 0.5 * 4 = 2m^2

Finally, we calculate the area of the octagon:
Area of octagon = area of square - area of 4 triangles
This is :
12,25 - 2 = 10,25m^2

The secret message

The secret message is: GO TO **CAPITOLE** TOMORROW AT 5:00 A.M.
Each hidden letter is bolded in the sentences preceded by a Violette.

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