

### 3- EXERCISES GEOMETRY

1. The perimeter of a rectangle is 20 cm and its altitude is  $\frac{2}{3}$  the longitude of the base. Calculate the area. What is the area of a square with the same perimeter?
2. We have a rectangle and a square with  $64 \text{ m}^2$  each one. If the base of the rectangle is twice the base of the square, calculate both perimeters.
3. A rectangular field of 403 m long has been sold in two blocks. Each square meter is 9€, the biggest block is  $\frac{7}{12}$  of the total field and give as benefit 7254€ more than the other block. What is the width of the field?
4. A constructor buy a rectangular field of dimensions 108m long and 54m for 84000€. He divides the field in 6 equal parts, to divide it he builds one street parallel to de longest side and two streets parallel to the smallest side. All streets are 6m width.
  - a) What is the area of each part?
  - b) Calculate the price for the  $\text{m}^2$  of each part if the constructor wants to earn 25% of the money he spends when buying the field.
5. A rectangular field of sides of 40m and 10 m is divided by the bisector of two opposite vertex. Calculate the area of the field between both bisectors.
6. A right trapezoid ABCD is given, we know  $\hat{A} = \hat{B}$ ,  $\hat{C} = 3\hat{D}$ . The greatest base AD is 8m long and the smallest base is 5m long. Calculate its area.
8. A square of  $1 \text{ m}^2$  is divided into squares of side 1 mm. What is the longitude of all the 1mm side squares if they are put on a line?
9. The hand of a clock is 2.61 cm long. After 26 minutes:
  - a) Compute the longitude of the arc drawn by the hand.
  - b) Compute the surface of the circular sector drawn by the hand.
10. Two equal pulleys of radius 24 cm have the centers at 108cm distance. Calculate the longitude of the rope that join the pulleys without crossing itself. What is the longitude of the rope? Calculate the area delimited by the rope.
11. A circle is inscribed in a square. Then all opposite middle points of the sides of the square are joined what divided the square in 4 equal squares, in each square a circle is inscribed. Which is the biggest area, the one of the biggest circle of the sum of the four little circles?
12. In a square field there are a goat in each vertex, a rope of 50m is used to tie each goat. Compute the area of the square that can not be reached by any goat.
13. A gardener build an square of side 2.8m. Inside it a circle is inscribed. With center in each vertex he builds inside the square four quarts of circle with radius the half of the side of the square. Calculate the area of the 9 parts obtained.
14. A fruit seller sells asparagus tied with a rope of 20 cm by 1€. Another fruit seller sells asparagus tied with a rope of 40 cm by 2€. If they sell the same quantity of asparagus, do they earn the same?
15. Two tangent circumferences are considered. One of them go by the center of the other. If the little circle is  $4 \text{ cm}^2$ , compute the area between those circumferences.

16. Given three equal circumferences with radius 3 tangent each others. Calculate the area of the curved triangle among them.
17. Calculate the circular crown obtained by inscribing and circumscribing two circumferences in a square of 6cm side.
18. We deal with two fields with the same area, one has a shape of a square and the other of a trapezoid. The trapezoid has bases of 108m and 92 m, and it has a path of 4m width that is perpendicular to the bases. The area of this path is 2.56 areas. Calculate the perimeter of the square field.
19. We have a square of side 4cm that it is inscribe in a circumference.
  - a) Compute the area of each arc segment.
  - b) Compute the area of a circle inscribed in the square.
20. A right isosceles triangle is inscribed in a circumference and its area is  $4\text{cm}^2$ .
  - a) Compute the area of the circumscribed circle.
  - b) Compute the area of each arc segment obtained.
21. We have a circle of radius 9 m. Inside the circle and with the same center two circles are built in order to obtain three regions with the same area. Find out the radios of these two circles.
22. In a circle of 6 cm of radius a regular hexagon is inscribed. Calculate the area of the circle that it is not on the hexagon.
23. A goat is tied by a rope of 7m in an outside corner of a squared base building of 5 m of side. The building is surrounding of grass, what is the area of grass that the goat can eat?