Problemas de Ecuaciones (soluciones)

Problemas de números

1.- The sum of a number and its square is 30. Find that number.

2.- The product of two consecutive numbers is 240. What are they? **[video]**

3.- The sum of the squares of two consecutive natural numbers is equal to 145. What are those two natural numbers? **[video]**

4.- What positive number multiplied by 3 is 40 units less than its square?

5.- Find an integer knowing that, if we multiply it by its consecutive, the result exceeds by 40 units a third of that number

6.- What negative number multiplied by 3 is 40 units less than its square?

7.- If 3 is subtracted from a positive number, and 3 is also added, the product of these two results is 72. Find that number.

8.- Find an integer knowing that, if we multiply it by its consecutive, the result exceeds by 40 units a third of that number.

9.- A number minus 12 times its reciprocal equals 1. What is the number? **[video]**

Problemas geométricos

10.- Find the dimensions of a rectangular field with an area of 80 m^2 if it is 2 meters longer than it is wide.

11.- Calculate the length of the legs of a right triangle knowing that one of them is 7 cm longer than the other and that its area is 15 cm^2.

12.- If the hypotenuse of a triangle measures 10 cm, find the measurement of the legs knowing that they differ by 2 cm.

13.- We want to know if it's possible to construct a right triangle whose sides are consecutive numbers. Set up and solve an equation that will help us resolve our question. **[video]**

14.- If we increase the side of a square by 2 cm, its area increases by 28 cm^2. Calculate what the side of the square initially measured. **[video]**

15.- If two opposite sides of a square are lengthened by 5 m and the other two are shortened by 2 m, a rectangle with an area of 120 m^2 is obtained. Find the side length and area of the original square.

16.- Calculate the radius of a circle, knowing that if we increase the radius by 3 cm, its area quadruples. **[vídeo]**

17.- A batch of square tiles is available. If a square is made with x tiles on each side, there are 87 leftover tiles, and if x+1 tiles are made on each side, there are 40 missing tiles. How many tiles are in the batch?

18.- The sides of a triangle measure 5, 6, and 7 cm. Determine what equal amount must be subtracted from each side to create a right triangle.

19.- Two square pieces are cut from a 2,400 cm2 board, one with a side length of 5 cm longer than the other. If the remaining strips of wood measure 1,283 cm2, what are the sides of the square pieces?

20.- One of the angles of a triangle measures 70°. Find the other two if you know that the amplitude of one is the square of the amplitude of the other.

21.- Calculate the area of a square whose diagonal measures 50 cm.

22.- A rectangular room has an area of 28 m^2 and a perimeter of 22 meters. Find the dimensions of the room.

23.- Using the wall of my house, we built a 108 m^2 coop for the chickens. We had to use exactly 30 m of fencing. What will the coop's dimensions be? **[video]**

24.- We have a 17 cm wire. How do we bend it so that it forms a right angle so that its ends are 13 cm apart? **[video]**

25.- A rectangular garden 50 m long by 34 m wide is surrounded by a uniform sand path. Find the width of the path if you know that the total area of the path is 540 m^2.

26.- Calculate the dimensions of a rectangle whose diagonal measures 75 m, knowing that it is similar to another rectangle whose sides measure 36 and 48 m respectively.

Soluciones:

1. They can be -6 or 5.
2. 15 and 16 or -16 and -15
3. 8 y 9 or -9 and -8
4. 8.
5. 6
6. -5
7. 9
8. 6
9. 4 or -3
10. 8x10 m
11. 3 and 10 cm
12. 6 and 8 cm
13. Sides must be 3, 4 y 5
14. 6 cm
15. Side 10 m, area 100 m^2
16. 3 cm
17. 4056 tiles
18. Must subtract 2.
19. 21 and 26 cm
20. 10º and 100º
21. 1250 cm^2
22. 7x4 m
23. Can be 12x9 or 18x6 m
24. In 2 parts of 5 cm and 12 cm respectively.
25. 6 m
26. 60x45 m