The solution to the quadratic equation $x^2 - 11x + 22 = 0$ is $x_1 = 3$ and $x_2 = 6$. What is the base of the numbers?

Using Vieta's formulas for quadratic equation:

$$x_1 + x_2 = 11$$

$$x_1 * x_2 = 22$$

So

$$(3)_n + (6)_n = (11)_n$$

$$(3)_n * (6)_n = (22)_n$$

Where n - base of the numbers.

$$(3)_n = (3)_{10} = 3$$

$$(6)_n = (6)_{10} = 6$$

$$(11)_n = (n+1)_{10} = n + 1$$

$$(22)_n = (2n+2)_{10} = 2n + 2$$

And

$$3 + 6 = n + 1$$

$$3 * 6 = 2n + 2$$

Obviously $n = 8$

Answer: $n = 8$