PROBLEMS FROM ALFONSO GONZÁLEZ

2nd-degree equations word problems:

38. A certain number added to its square is 30. Find the number. *(Sol: There are two possible solutions: – 6 and 5)*

39. Three more than twice a number is five less than the square of the number. What is the number?
(Sol: There are two possible solutions: – 2 and 4)

40. Find the length and width of a rectangle whose length is 5 hm (hectometre /ˈhektəmiːtəʳ) longer than its width and whose area is 50 hm^2. (Tip: Draw a diagram) *(Sol: 5 x 10 hm)*
square hectometres

41. Find two consecutive negative odd integers whose product is 99. *(Sol: - 11 and - 9 ~~9 and 11~~)*

42. The sum of two numbers is 18, and the product of these two numbers is 56. What are the numbers?
(Sol: 4 and 14)

43. If the length of each side of a square is increased by 6 mm, the area is multiplied by 16. Find the length of one side of the original square. (Tip: Draw up a diagram) *(Sol: 2 mm)*

44. The difference of the squares of two consecutive even integers is 68. What are these numbers?
(Sol: 16 and 18)

45. If the measure of one side of a square is increased by 2 cm and the measure of the adjacent side is decreased by 2 cm, the area of the resulting rectangle is 32 cm^2. Find the side of the original square. *(Sol: 6 cm)*

46. A plot of land for sale has a width of **x** metres and a length that is 8 metres less than its width. A farmer will only purchase the land if it measures 240 m^2. What value of **x** will cause the farmer to purchase the land?
(Sol: 12 x 20 m)

47. The sum of a number and six times its reciprocal is five. What is the number?
(Sol: There are two possible solutions, 2 and 3)

48. Collin is building a deck on the back of his house. He has enough lumber for the deck to be 144 m^2. The length should be 10 m more than its width. What should the dimensions of the deck be?. *(Sol: 8 x 18 m)*