A SUM OF DISTANCES PROBLEM (CH 2, PROBS 9,10,11, 11, 25, 27 AND SIMILAR)

Alice and Betty had just stepped off the airplane when Alice turned to Betty and said " Well that was a long flight but we still have to drive to Santa Barbara, I wonder how far that is?"

Betty answered, saying "I really don't know but the person I was sitting near on the airplane told me Santa Barbara was exactly 60 miles closer than San Diego from here and I think it's about 190 miles to San Diego."

" So that would make the distance to Santa Barbara about 190 minus 60 or about 130 miles, if you are correct", said Alice.

 Just then a nearby fellow passenger said " I couldn't help overhearing your conversation and, although I don't know the distance to Santa Barbara from here, I do know that the distance from San Diego to Santa Barbara is exactly 350 miles, if that's any help".

"It certainly is", said Betty. "We could let the distance from here to San Diego be 'x' instead of our supposed 190 miles. Then the distance to Santa Barbara will then be 'x-60' and the total distance is the sum of the two distances or (x) plus (x-60) equals 350 miles."

" Right" , said Alice. "The new value of 'x' will replace our 190 mile guess and the exact distance to Santa Barbara is 'x-60' just as you said".

So....

$$(x)+(x-60)=350$$
$$2x-60=350$$
$$2x=410$$
$$x=205$$

And the exact distance to Santa Barbara is x-60 or 145 miles.