Comment to 9c)

First look at what the estimate of poverty level with uncertainty interval would be if we just applied the function .6\*level from a), i.e.

.6\*152000=91200  
.6\*150174.6=90104.76  
.6\*154165.5=92499.35.

By interpolation we get the proportions of poor;

P = .88\*.092 + .12\*.117=.095  
plo = .989524\*.092 + .010476\*.117=0.0922619  
pup = .750065\*.092 + .249935\*.117=0.09824837

But we have to take account of that the sample distribution differs from the true (with known median), so we use the ratio between the (interpolated with lower and upper for median from a) ) estimated percentile and the true percentile (.50);

lorat = {(mlo-150000)/(150300-150000)\*.47+(150300-mlo)/(150300-150000)\*.48}/.50=  
={174.5967/300\*.47+125.4033/300\*.48}/.50=.9483602

uprat = {(mup-153700)/(154500-153700)\*.52+(154500-mlo)/(154500-153700)\*.53}/.50=  
={465.5911/800\*.52+334.4089/800\*.53}/.50=1.04863

Then we can calculate the proportion and interval as

px = p = .095  
plox = plo\*lorat =0.0922619\*.9483602= 0.08749752  
pupx =pu\*uprat =0.09824837\*1.04836= 0.1029997