

Name: _____

A school desires to estimate the average score that may be obtained on a reading comprehension exam for students in the sixth grade. The school's students are grouped into three tracks, with the fast learners in track I and the slow learners in track III. The school decides to stratify on tracks because this method should reduce the variability of the test scores.

The sixth grade contains 55 students in track I, 80 in track II, and 65 in track III. A stratified sample of 50 students is proportionally allocated and yields a simple random sample of $n_1 = 14$, $n_2 = 20$, and $n_3 = 16$ from tracks I, II, and III. The test is administered to a sample of students, with the results shown in the table attached.

1. Complete the summary statistics in the chart below.

	n	Mean	Median	Standard Deviation
Track I				
Track II				
Track III				

2. Find the estimator of the population mean (y_{st}), the variance of y_{st} , and the 95% confidence interval for y_{st} .
3. Find the 95% confidence interval for the mean score of students in Track II.
4. Find the estimator for the total score (Ny_{st}) for all students, the variance $V(Ny_{st})$, and confidence interval for Ny_{st} .
5. Check to see if there is a significant difference between the scores of students in Track II and track III by computing an estimated difference between the population means.

Track I	Track II	Track III
80	85	42
92	82	32
68	48	36
85	75	31
72	53	65
87	73	29
85	65	43
91	78	19
90	49	53
81	69	14
62	72	61
79	81	31
61	53	42
83	59	30
	68	39
	52	32
	71	
	61	
	59	
	42	