MTH 324, Quiz #9, Fall 2023 Name KEY

Instructions: Answer each question as thoroughly as possible. Round answers to 4 decimal places as needed. Exact answers are best when possible. Be sure to answer all parts of each question.

1. Do people taking two different routes of the same length take the same amount of time? Use the data in the table and conduct a permutation test of the data to see if the means are different.

$H_0: \mu_1 = \mu_2$

$H_a: \mu_1 \neq \mu_2$

original mean = -15.01667

p-val = 2×10^{-4}

	Transit times (h)	
	Sample 1 (Treatment A)	Sample 2 (Treatment B)
	44	52
	51	64
	52	68
	55	74
	60	79
	62	83
	66	84
	68	88
	69	95
	71	97
	71	101
	76	116
	82	
	91	
	108	

2. Use bootstrapping to construct a 95% confidence interval of the data above. Compare the result to using a t-interval of the mean differences.

bootstrapping answers may vary some

(-27.283, -2.467)

t-interval: (-28.742, -1.291)

this one is a bit wider but similar