Reports may vary

Part 1:
H_0: $\mu_d = 0$
H_a: $\mu_d > 0$
$\mu_d = \mu_A - \mu_B$
xbar = 8.6
sd = 12.487
n = 20
t = 3.0799
p = 0.3%
p < α
Reject H_0, Accept H_a
We have evidence that the SAT class is effective, on average, for all students.

Part 2:
H_0: $\mu = 30$
H_a: $\mu < 30$
xbar = 28.8
s = 2.872
n = 25
t = –2.089
p = 2.37%
p < α
Reject H_0, Accept H_a
We have evidence that the average class size of all 6th grade classes in California is less than 30 students.

Part 3:
H_0: $\mu_r = \mu_s$
H_a: $\mu_r \neq \mu_s$
x1bar = 57429.9
s1 = 3392.10
n1 = 10
x2bar = 60796.8
s2 = 5557.94
n2 = 10
t = −1.635
Using GC, we find p = 12.29%. Using df = 9, we find 10% < p < 20%
p > α, Fail to reject H_0, Fail to accept H_a
We do not have evidence that there is a difference, on average, between all rural salaries and all suburban salaries.
Using GC, we get this CI and sentence:
We are 90% confident that the average difference between all rural and suburban salaries is between −$6978, which means suburban is higher by $6978, and +$245, which means rural is higher by $245. Notice that zero is contained in the interval, so there may be no difference between the two groups.
Using df = 9 and t = 1.883, we get this CI and sentence:
We are 90% confident that the average difference between all rural and suburban salaries is between −$7141, which means suburban is higher by $7141, and +$407, which means rural is higher by $407. Notice that zero is contained in the interval, so there may be no difference between the two groups.