Yarmouk University	Fall of 2003/2004	Date: 2/12/2003
Department of statiastics	Midterm Exam	Duration: 1 hour
	STAT 205	

الرقم الجامعي:	الرقم المتسلسل:	اسم الطالب:

General instructions:

1. Do NOT use pencil.
2. Do NOT use printed tables or a calculator.
3. Do NOT use additional blank sheets.
4. Write down ONLY the final answer inside the answer box.

Q1. If a sample of 25 observations gave a mean of 16 and a variance of 9. Test that the population mean exceeds 15. use α=0.1.

Hypotheses: H_0: μ=15 vs. H_a: μ>15

Test statistic= 1.667

P-value= 0.0543

Decision: Reject H_0

Q2. The following sample gives the heart pulse rate (HPR) for 6 students before and after running for 100m, test that the HPR changes after running.

Before	65	60	59	69	61	66
After	80	120	110	100	105	90

Hypotheses: μ_d=0 vs. $\mu_d \neq 0$

Test statistic= -5.37

P-value= 0.002

Decision: Reject H_0

95% CI for μ_d:[-55.44,-19.56]

Q3. Using the following output

Two-Sample T-Test and CI: X; Y

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Two-sample T for X vs Y

   N      Mean     StDev   SE Mean
X  8      6.18      1.45      0.51
Y  8      6.29      1.04      0.37

Difference = mu X - mu Y
Estimate for difference:  -0.113
95% CI for difference: (-1.466; 1.241)
T-Test of difference = 0 (vs not =): T-Value = -0.18  P-
Value = 0.861  DF = 14
Both use Pooled StDev = 1.26
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Hypotheses:

H_0: $\mu_X-\mu_Y=0$ vs. H_a: $\mu_X-\mu_Y \neq 0$

Test statistic: -0.18

X-Y = -0.113

Decision: Accept H_0

95% CI for $\mu_X-\mu_Y$:

[-1.44 , 1.24]