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WeBWorK assignment Assignment-06 is due on 12/02/2012 at 10:00pm PST.

1. (4 pts) Given:

$$n_1 = 15, \bar{x} = 24.99, \sum (x_i - \bar{x})^2 = 108.47,$$

and

$$n_2 = 13, \bar{y} = 32.92, \sum (y_i - \bar{y})^2 = 77.68.$$

Part a) Calculate the pooled variance s^2 to 3 decimal places. During intermediate steps to arrive at the answer, make sure you keep as many decimal places as possible so that you can achieve the precision required in this question. ____

Part b) Determine a 95% confidence interval for $\mu_1 - \mu_2$. Leave your answer to 2 decimal places. (____,____)

Part c)

Based on the 95% confidence interval constructed in the previous part, which of the following conclusions can be drawn when we test $H_0 : \mu_1 = \mu_2$ vs. $H_a : \mu_1 \neq \mu_2$ with $\alpha = 0.05$.

- A. Do not reject H_0 since 0 is within the interval found in part (b).
- B. Do not reject H_0 since 0 is not in the interval found in part (b).
- C. Reject H_0 since 0 is in the interval found in part (b).
- D. Do not reject H_0 since 7.93 is within the interval found in part (b).
- E. Reject H_0 since 0 is not within the interval found in part (b).

Answer(s) submitted:

- 7.1596
- -10.0146
- E

(correct)

Correct Answers:

- 7.15962
- -10.0146; -5.84537
- E

2. (6 pts) Three different methods are used to transport milk from a farm to a dairy plant. Their daily costs (in \$100) are:

Method 1: 8.10 4.40 6.00 7.00

Method 2: 6.60 8.60 7.35

Method 3: 12.00 11.20 13.30 10.55 11.50

Part a) Fill in the missing sample standard deviation (to 4 decimal places) in the following table:

Method	n_i	\bar{x}_i	s_i
1	4	6.375	____
2	3	7.517	1.0104
3	5	11.71	1.0322

Part b) Calculate the pooled variance s^2 for the costs of the three methods (to 4 decimal places). ____

Part c) Complete the ANOVA table (each entry to 2 decimal places)

Source of variation	df	SS	MS	F
Factor	2	____	____	____
Error	9	____	____	____
Total	11	____	____	____

Part d) Which of the following conclusion can be drawn when testing the difference of the costs of the three methods?

- A. Since $F_{obs} > F_{9,2,\alpha=0.01}$, we conclude that the population means are all the same.
- B. Since $F_{obs} < F_{2,9,\alpha=0.01}$, we conclude that the population means are all the same.
- C. Since $F_{obs} > F_{2,9,\alpha=0.01}$, we conclude that the population means are all the same.
- D. Since $F_{obs} < F_{2,9,\alpha=0.01}$, we conclude that the population means are not all the same.
- E. Since $F_{obs} > F_{2,9,\alpha=0.01}$, we conclude that the population means are not all the same.

Answer(s) submitted:

- 1.57136
- 1.52345
- 72.18287
- 36.091435
- 23.6905
- 144.72775
- 1.52345
- 216.91062
- E

(score 0.333333343267441)

Correct Answers:

- 1.5714
- 1.5235
- 70.72
- 35.36
- 23.21
- 13.71
- 1.52
- 84.43
- E