Name: _____ Date: _____

Workshop comparison 1

Use this workshop table to compare completion rates. All rows have positive totals. The table gives no information about assignment to centers.

Center	Completed	Did not complete	Total
North	14	6	20
South	9	11	20
East	18	12	30
West	9	1	10
Total	50	30	80

(a) Find the overall probability of completion, rounded to four decimal places.

Set it up: Whole group: all participants. Overall probability = completed total / grand total.

Work: Completed = 50; total = 80. P(completed) = 50/80 = 0.6250.

Answer: 0.6250.

(b) Find the completion probability within EACH center, rounded to four decimal places.

Set it up: Whole group: the selected center only. Divide completed in each row by that row total.

Work: North: 14/20 = 0.7000; South: 9/20 = 0.4500; East: 18/30 = 0.6000; West: 9/10 = 0.9000.

Answer: The four conditional rates are North 0.7000, South 0.4500, East 0.6000, West 0.9000.

(c) Are center and completion independent in this table? Compare at least two conditional probabilities with the overall probability.

Set it up: For every center with a positive row total, compare the exact conditional rate to the exact overall rate.

Work: North: 14/20 != 50/80. South: 9/20 != 50/80. The unequal rates already disprove independence.

Answer: Dependent in this table: center and completion are associated because the rates differ.

(d) Can this table establish that the center CAUSED a change in completion? Explain.

Set it up: Check whether random assignment or another design justifies a causal conclusion. A table by itself gives counts.

Work: No assignment procedure or control of other influences is stated. Differences could also reflect participant differences.

Answer: No. The table alone does not establish cause and effect, whether the rates match or differ.

Workshop comparison 2

Use this workshop table to compare completion rates. All rows have positive totals. The table gives no information about assignment to centers.

Center	Completed	Did not complete	Total
North	18	12	30
South	12	8	20
East	6	4	10
West	24	16	40
Total	60	40	100

(a) Find the overall probability of completion, rounded to four decimal places.

Set it up: Whole group: all participants. Overall probability = completed total / grand total.

Work: Completed = 60; total = 100. P(completed) = 60/100 = 0.6000.

Answer: 0.6000.

(b) Find the completion probability within EACH center, rounded to four decimal places.

Set it up: Whole group: the selected center only. Divide completed in each row by that row total.

Work: North: 18/30 = 0.6000; South: 12/20 = 0.6000; East: 6/10 = 0.6000; West: 24/40 = 0.6000.

Answer: The four conditional rates are North 0.6000, South 0.6000, East 0.6000, West 0.6000.

(c) Are center and completion independent in this table? Compare at least two conditional probabilities with the overall probability.

Set it up: For every center with a positive row total, compare the exact conditional rate to the exact overall rate.

Work: North: 18/30 = 60/100. South: 12/20 = 60/100. East and West also equal the overall rate.

Answer: Independent in this table: every row rate equals the overall rate.

(d) Can this table establish that the center CAUSED a change in completion? Explain.

Set it up: Check whether random assignment or another design justifies a causal conclusion. A table by itself gives counts.

Work: No assignment procedure or control of other influences is stated. Differences could also reflect participant differences.

Answer: No. The table alone does not establish cause and effect, whether the rates match or differ.

Workshop comparison 3

Use this workshop table to compare completion rates. All rows have positive totals. The table gives no information about assignment to centers.

Center	Completed	Did not complete	Total
North	8	0	8
South	3	7	10
East	4	6	10
West	5	7	12
Total	20	20	40

(a) Find the overall probability of completion, rounded to four decimal places.

Set it up: Whole group: all participants. Overall probability = completed total / grand total.

Work: Completed = 20; total = 40. P(completed) = 20/40 = 0.5000.

Answer: 0.5000.

(b) Find the completion probability within EACH center, rounded to four decimal places.

Set it up: Whole group: the selected center only. Divide completed in each row by that row total.

Work: North: 8/8 = 1.0000; South: 3/10 = 0.3000; East: 4/10 = 0.4000; West: 5/12 = 0.4167.

Answer: The four conditional rates are North 1.0000, South 0.3000, East 0.4000, West 0.4167.

(c) Are center and completion independent in this table? Compare at least two conditional probabilities with the overall probability.

Set it up: For every center with a positive row total, compare the exact conditional rate to the exact overall rate.

Work: North: 8/8 != 20/40. South: 3/10 != 20/40. The unequal rates already disprove independence.

Answer: Dependent in this table: center and completion are associated because the rates differ.

(d) Can this table establish that the center CAUSED a change in completion? Explain.

Set it up: Check whether random assignment or another design justifies a causal conclusion. A table by itself gives counts.

Work: No assignment procedure or control of other influences is stated. Differences could also reflect participant differences.

Answer: No. The table alone does not establish cause and effect, whether the rates match or differ.