

t-test problems: Use the scores to calculate t; check against result:

Case A) (Small error deviations)

Sample 1 (Exper.)					Sample 2 (Control)				
	Score	Mean	Devtn.	Square		Score	Mean	Devtn.	Square
1	7	8	-1	1	4	3	4	-1	1
2	9	8	1	1	5	5	4	1	1
3	8	8	0	0	6	4	4	0	0
Mean	8		Sum =	2	Mean	4		Sum =	2
SD =	1		Var =	1	SD =	1		Var =	1
IV Effect = 4									
SEdiff= 0.816									
t = 4.90									

Case B) (Large error deviations [same IV Effect])

Sample 1 (Exper.)					Sample 2 (Control)				
	Score	Mean	Devtn.	Square		Score	Mean	Devtn.	Square
1	0	8	-8	64	4	-10	4	-14	196
2	16	8	8	64	5	15	4	11	121
3	8	8	0	0	6	7	4	3	9
Mean	8		Sum =	128	Mean	4		Sum =	326
SD =	8		Var =	64	SD =	12.77		Var =	163
IV Effect = 4									
SEdiff= 8.699									
t = 0.46									

Case C) Big deviations

Sample 1 (Exper.)					Sample 2 (Control)				
	Score	Mean	Devtn.	Square		Score	Mean	Devtn.	Square
1	20	21	-1	1	4	2	10	-8	64
2	12	21	-9	81	5	22	10	12	144
3	31	21	10	100	6	6	10	-4	16
Mean	21		Sum =	182	Mean	10		Sum =	224
SD =	9.54		Var =	91	SD =	10.58		Var =	112

$$SE_{diff} = 8.226$$

$$t = 1.34$$

Case D) Smaller deviations

Sample 1 (Females)					Sample 2 (Males)				
	Score	Mean	Devtn.	Square		Score	Mean	Devtn.	Square
1	3	3	0	0	7	5	6	-1	1
2	4	3	1	1	8	6	6	0	0
3	2	3	-1	1	9	4	6	-2	4
4	5	3	2	4	10	7	6	1	1
5	1	3	-2	4	11	6	6	0	0
6	3	3	0	0	12	8	6	2	4
Mean	3		Sum =	10	Mean	6		Sum =	10
SD =	1.4142		Var =	2	SD =	1.41421		Var =	2

$$IV_{Eff} = -3$$

$$SE_{diff} = 0.816$$

$$t = -3.67$$

Case E)

Sample 1 (Females)

	Score	Mean	Devtn.	Square
1	65	65	0.5	0.25
2	65	65	0.5	0.25
3	62	65	-2.5	6.25
4	66	65	1.5	2.25

Mean 64.5 Sum = 9

SD = 1.7321 Var = 3

Sample 2 (Males)

	Score	Mean	Devtn.	Square
5	70	70	-0.25	0.06
6	70	70	-0.25	0.06
7	67	70	-3.25	10.6
8	74	70	3.75	14.1

Mean 70.25 Sum = 24.8

SD = 2.87228 Var = 8.25

IVEff= -5.75

SEdiff= 1.677

t = -3.43