

Statistics Calculators

Designed for statistics memory
Complements *Student-Friendly Statistics*

The main schema:

$$t = \frac{\text{IV Effect}}{\text{Error}} = \frac{\text{Mean1} - \text{Mean2}}{\text{Error}}$$

Notes:

Contents

Mean

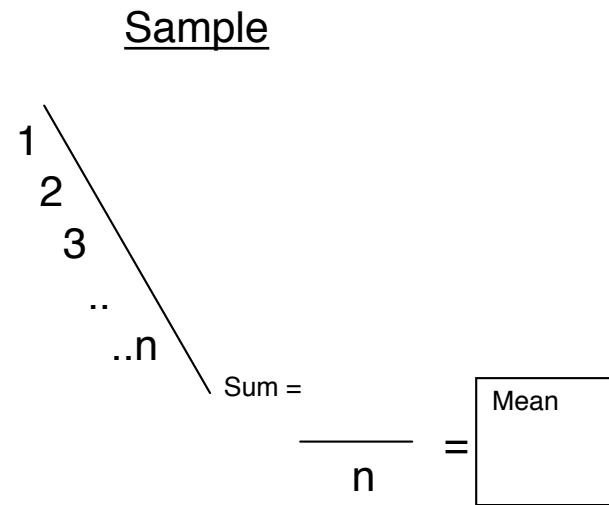
Median

Standard Deviation & Variance

t-test

Mean

1. Put numbers in column
2. Sum them
3. Divide by n (# of numbers)



Median

1. Line up numbers in order
(smallest to largest or v.v.)
2. Find middle
(if n is even, find middle of
middle two: $(X + X) / 2$)

1
2
3
4
5
6
7
8

Sample

}

Median

Example:

1
2
3
4
5
6
7
8

Sample

3
5
6
8
10
15
17
142

}

$$(8 + 10) / 2 = 18/2 =$$

Median
9

Standard Deviation (SD) & Variance (SD²)

	Score	-	Mean	=	Error Deviation	Deviation Squared
1. Get error (4 column table; calculate dev's and then square them in last column)	1					
	2					
	3					
	4					
	..					
	n					
					Sum =	<input type="text"/>
2. Sum squared dev's						
					$\frac{\text{sum}}{n - 1}$	<input type="text" value="SD<sup>2</sup>"/>
3. Divide by n - 1 (as in mean)						← SD ² , or Variance
4. "Unsquare" (square root, because you squared earlier)					$\sqrt{\quad}$	<input type="text" value="SD"/>
						← SD, or Standard Deviation

Meaning of SD: The mean of the error deviations. (This complex formula is good for math reasons.)

EXAMPLE: Standard Deviation & Variance

1. Get error
(4 column table; calculate dev's and then square them in last column)

	Score	- Mean	= Deviation	Deviation Squared
1	3	5	-2	4
2	5	5	0	0
3	9	5	4	16
4= <i>n</i>	3	5	-2	4

2. Sum
squared dev's

$$\text{Sum} = \boxed{24}$$

3. Divide by
 $n - 1$
(as in mean)

$$\frac{\text{sum}}{n - 1} = \frac{24}{3} = \boxed{\begin{matrix} \text{SD}^2 \\ 8 \end{matrix}}$$

← SD², or Variance

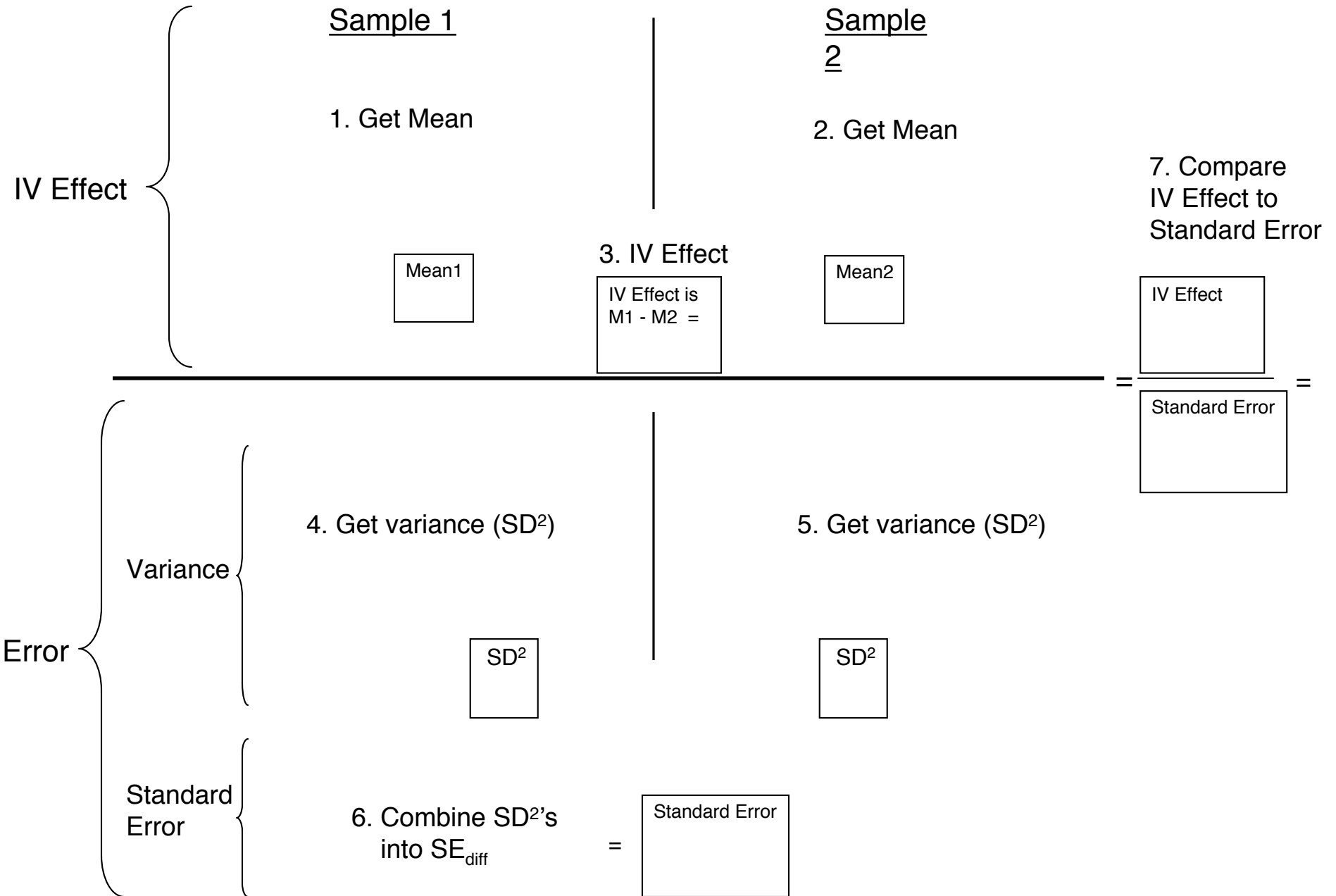
4. "Unsquare"
(square root, because you squared earlier)

$$\sqrt{8} = \boxed{\begin{matrix} \text{SD} \\ 2.83 \end{matrix}}$$

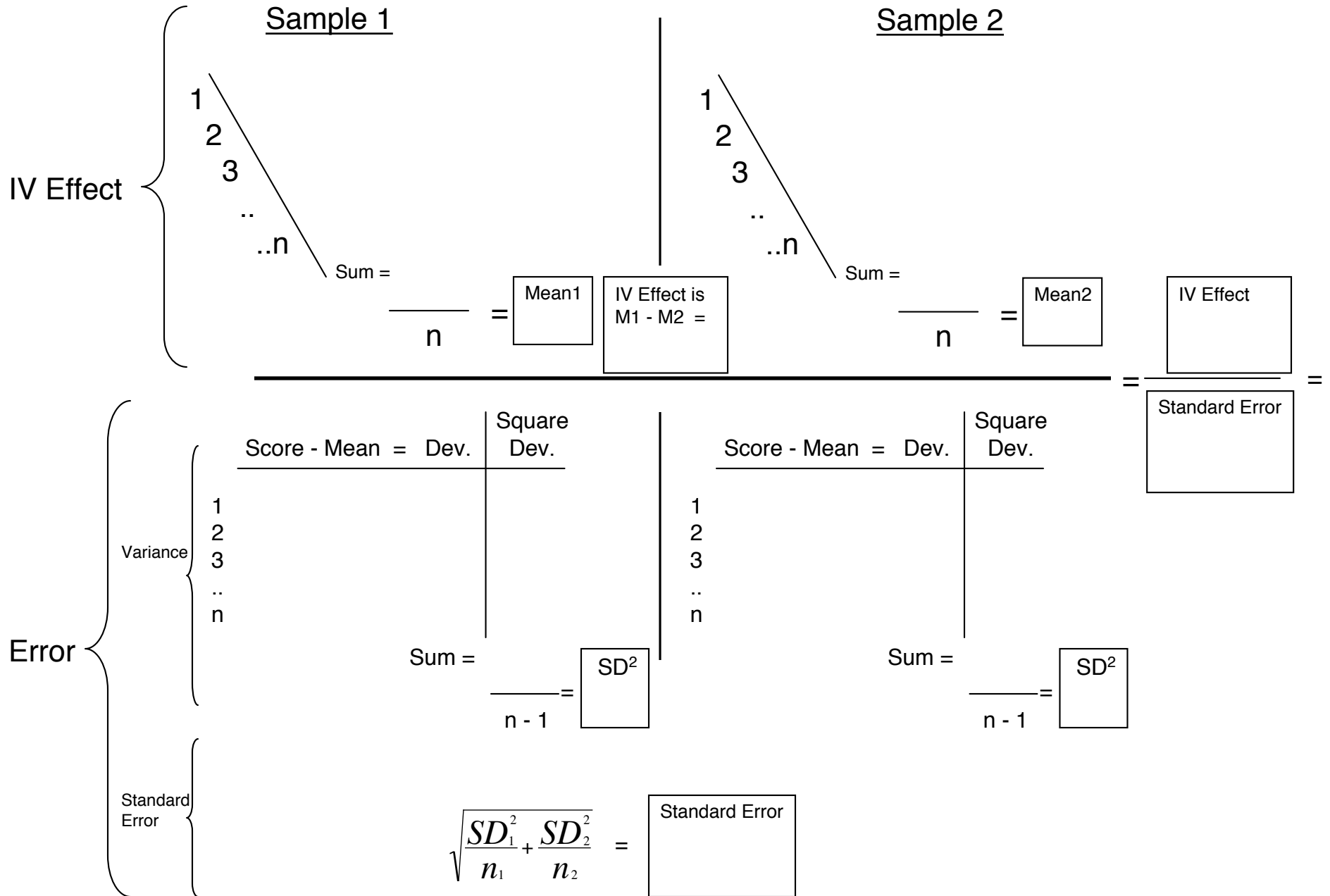
← SD, or Standard Deviation

Meaning of SD: The mean of the error deviations. (This complex formula is good for math reasons.)

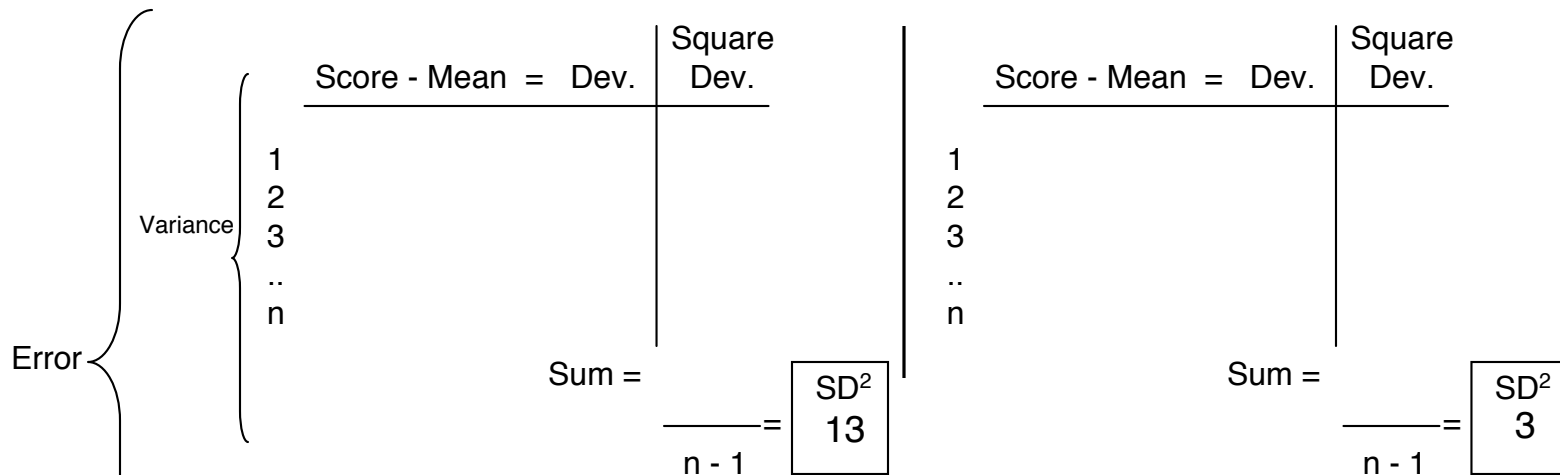
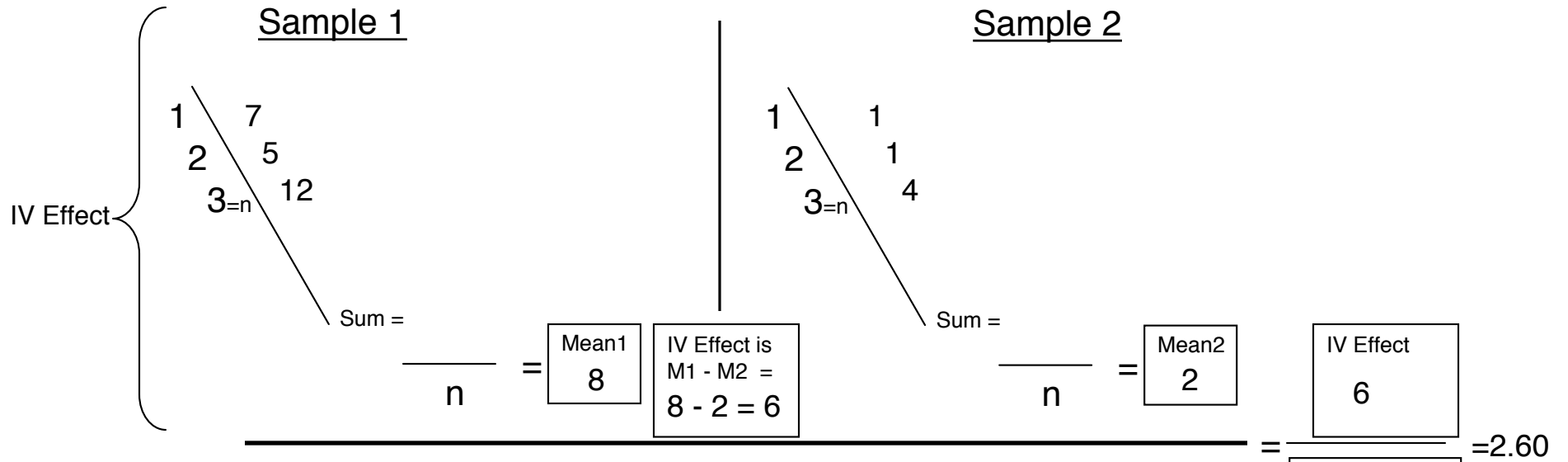
t-test: schema



t-test



EXAMPLE: t-test



Standard Error

$$\sqrt{\frac{SD_1^2}{n_1} + \frac{SD_2^2}{n_2}} = \sqrt{\frac{13}{3} + \frac{3}{3}} = \boxed{\text{Standard Error } 2.309}$$

t-test

