

Unbalanced Recall Experiment

To calculate the **Mean**, add up all the individual values and divide by the number of values e.g. Reinforcement[None]: $\text{Mean} = 251/11 = 22.8182$

	Isolation Time			
Reinforcement	20 min	40 min	60 min	Mean
None	18	35		22.8182
	24	31	8	
	26	26	14	
	20	30	19	
Verbal	19	27	36	26.0909
	17	28	30	
	23	23	28	
		24	32	
Mean	21.0	28.0	23.8571	24.4545

To calculate the **LS Mean**, add up the cell means and divide by the number of cells e.g. Reinforcement[None]: $\text{LS Mean} = 61.1667/3 = 20.3889$.

	Isolation Time			
Reinforcement	20 min	40 min	60 min	LS Mean
None	22.0	30.5	13.6667	22.0556
Verbal	19.6667	25.5	31.5	25.5556
LS Mean	20.8333	28.0	22.5833	23.8056

Use LS Means, rather than Means, when calculating **Estimated Effects**.

$$\text{Reinforcement[None]: } 22.0556 - 23.8056 = -1.75$$

$$\text{Isolation Time[20]: } 20.8333 - 23.8056 = -2.9722$$

$$\text{Isolation Time[40]: } 28.0000 - 23.8056 = +4.1944$$

$$\text{Reinforcement[None]*Isolation Time[20]: } 22.0 - (-1.75) - (-2.9722) - 23.8056 = 2.9167$$

$$\text{Reinforcement[None]*Isolation Time[40]: } 30.5 - (-1.75) - (+4.1944) - 23.8056 = 4.25$$