Calculation Type Red= week 2 Purple= week 3 Blue= week 4 Dark blue= week 5 Green= week 6 Pink= week 8 Yellow= week 9 Orange = study break	**Symbol**	**Formula**	**Steps**	**Other Notes**
Mean	$\bar{X}$	$\bar{X}=\frac{\sum X}{N}$		Mean for positively valenced binary items= p Mean for negatively valenced binary items= q, or 1-p
Variance	S^2	$S^2=\frac{\sum[(X-\bar{X})^2]}{N}$	1) Calculate deviation of EACH score from the mean: $(X-\bar{X})$ 2) Square each deviation: $[(X-\bar{X})^2]$ 3) Sum the squared deviations and divide by the total number of scores in the distribution: $S^2=\frac{\sum[(X-\bar{X})^2]}{N}$	Variance for binary item= pq

Calculation Type Red= week 2 Purple= week 3 Blue= week 4 Dark blue= week 5 Green= week 6 Pink= week 8 Yellow= week 9 Orange = study break	**Symbol**	**Formula**	**Steps**	**Other Notes**
Standard Deviation	$\sqrt{S^2}$ or σ	$\sigma = \sqrt{\frac{\sum[(X-\bar{X})^2]}{N}}$	Square root of variance	SD for binary item= $\sqrt{pq}$
Covariance	C_{xy}	$C_{xy} = \frac{\sum(X-\bar{X})(Y-\overline{Y})}{N}$	1) Compute deviation for each score from mean for each distribution (X-$\overline{X}$) and (Y-$\overline{Y}$) 2) Calculate the "cross products" of the deviation scores: (X-$\overline{X}$) * (Y-$\overline{Y}$) 3) Calculate the mean of the cross products	Provides clear information about the DIRECTION of an association between 2 variables Doesn't provide clear information about the MAGNITUDE of the association between 2 variables
Correlation	r_{xy}	$r_{xy} = \frac{Cxy}{\sigma x \sigma y}$	1) Calculate covariance 2) Calculate SD for variable X and SD for variable y	Provides clear information about the DIRECTION and MAGNITUDE of the

Calculation Type Red= week 2 Purple= week 3 Blue= week 4 Dark blue= week 5 Green= week 6 Pink= week 8 Yellow= week 9 Orange = study break	**Symbol**	**Formula**	**Steps**	**Other Notes**
			3) Multiply SD of variable X by SD of variable Y 4) Divide covariance by number generated in step 3	association between 2 variables
Variance of Compositive Variables	$S^2_{composite}$	$S^2_{composite} = (S^2_i + S^2_j) + (2r_{ij} * \sigma_i * \sigma_j)$ Where: S^2_i = Variance of item i S^2_j = Variance of item j r_{ij} = Correlations of item I and J σ_i = SD of item I		

Calculation Type Red= week 2 Purple= week 3 Blue= week 4 Dark blue= week 5 Green= week 6 Pink= week 8 Yellow= week 9 Orange = study break	**Symbol**	**Formula**	**Steps**	**Other Notes**
		σ_j = SD of item J		