Lesson 3 & 4: Using Excel functions for Standard Deviation & Z Scores

Standard Deviation

STDEV – displays the standard deviation of a group of numbers in a group (or array) of cells
Format: **=STDEV(**_starting cell_ **:** _ending cell_**)**

Choose a cell to type the function (e.g., D1 in the example below)
(I've typed a description in the next cell, E1.)

SUM			▾ ⊖ ✕ ✓ f_x	=stdev(A1:A7)	
	A	B	C	D	E	F
1	12			=stdev(A1:A7)	
2	14				
3	9				
4	8				
5	11				
6	9				
7	10				
8					

D1			▾ ⊖	f_x	=STDEV(A1:A7)	
	A	B	C	D	E	F
1	12			2.070197	standard deviation
2	14				
3	9				
4	8				
5	11				
6	9				
7	10				

AVERAGE – Calculates the average of the numbers in a group (or array) of cells
Format: **=AVERAGE(**_starting cell_ **:** _ending cell_**)**

Choose a cell to type the function (e.g., D2 in the example below)
(I've typed a description in the next cell, E2.)

SUM			▾ ⊖ ✕ ✓ f_x	=average(A1:A7)	
	A	B	C	D	E	F
1	12			2.070197	standard deviation
2	14			=average(A1:A7)	
3	9				
4	8				
5	11				
6	9				
7	10				

D2			▾ ⊖	f_x	=AVERAGE(A1:A7)	
	A	B	C	D	E	F
1	12			2.070197	standard deviation
2	14			10.42857	mean or average
3	9				
4	8				
5	11				
6	9				
7	10				

Z Score

STANDARDIZE – returns the z score for a specific number in a set of data. The standard deviation and mean of the data must be known (or computed) before using the function.
Format: **=STANDARDIZE(***x, mean, standard deviation***)** where x is the number in the set of data for which you want the corresponding z score

In the example below, the mean of the data is in cell D2 and the standard deviation is in cell D1. We want to find the z score that corresponds to 11 (in cell A5) in the set of data and place it in cell B5.

Example: find the z score for 8 (in cell A4) in the set of data and place it in cell B4.

	SUM		▾ ⊙ ✕ ✓ f_x	=standardize(A4,D2,D1)		
	A	B	C	D	E	F
1	12			2.070197	standard deviation	
2	14			10.42857	mean or average	
3	9					
4	8	=standardize(A4,D2,D1)				
5	11	0.276026	z score for 11 in this set of data			
6	9					
7	10					

	B4		▾ ⊙	f_x	=STANDARDIZE(A4,D2,D1)		
	A	B	C	D	E	F	
1	12			2.070197	standard deviation		
2	14			10.42857	mean or average		
3	9						
4	8	-1.17311	z score for 8 in this set of data				
5	11	0.276026	z score for 11 in this set of data				
6	9						
7	10						