

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	I	J	K	L	M	N	O	P	Q						
0	1	0	0	3	5	67	5	2	Start:	Heights	Q7	Identify data to be summarized							1			
0	1	0	1	4	1	62	4	3	G2:G241 Identify range:												2	
0	1	0	1	3	4	60	5	4										3				
0	1	1	0	4	5	60	4	5	J	K	L	M	N	O	P	Q	4					
0	0	1	0	3	1	71	3	6	Step A: Determine # of bins												5	
0	0	0	0	5	2	76	6	7	# of data values	240	=COUNTA(G2:G241)								6			
0	0	1	0	1	1	63	5	8	Est. # of bins	7.9	=LOG(M7,2)					# data values = 2^(#bins)			7			
1	0	0	0	4	3	65	5	9	Select # bins	8	Manual entry								8			
1	0	1	0	3	5	59	7	10										9				
0	1	1	1	2	1	67	6	11	Maximum	100	=MAX(G2:G241)								10			
0	1	0	0	1	5	60	5	12	Minimum	34	=MIN(G2:G241)								11			
1	0	1	0	3	2	68	5	13	Range	66	=M11-M12					Range = Max - Min			12			
0	1	1	1	1	3	61	3	14	Bin Width	8.25	=M13/M9					Bin width = Range/#bins			13			
0	0	1	0	4	2	67	6	15	Select width	8	Manual entry								14			
1	0	0	0	4	2	70	6	16										15				
1	0	0	1	5	1	54	5	17	J	K	L	M	N	O	P	Q	16					
1	0	1	1	3	2	48	6	18	Step B: Set bin maximums ascending								<i>[Instructor already did this. See below.]</i>					17
1	0	1	1	4	1	64	6	19	K25	=M\$12+M\$15-1					K41	=M\$12+M\$15-1			18			
0	1	1	1	3	1	73	4	20	K26	=K25+M\$15					K42	=K41+M\$15			19			
1	0	0	0	5	1	66	7	21	<b>Pull down K26 to K33</b>								<b>Pull down K42 to K49.</b>					20
0	0	1	0	3	2	69	5	22	J	K	L	M	N	O	P	Q	21					
0	0	1	0	2	3	76	4	23	Step C1: Calculate bin count using COUNTIF												22	
0	0	0	0	4	2	65	6	24	Range	BinMax	Count	<b>Formulas under Count for each bin**</b>								23		
0	0	1	0	3	4	62	4	25	33-41	41	5	=COUNTIF(G\$2:G\$241,"<="&K25)								24		
0	1	1	1	5	4	76	6	26	41-49	49	10	=COUNTIF(G\$2:G\$241,"<="&K26)-SUM(L\$25:L25)								25		
0	0	1	0	4	4	73	6	27	49-57	57	48	=COUNTIF(G\$2:G\$241,"<="&K27)-SUM(L\$25:L26)								26		
1	0	1	0	5	1	76	3	28	57-65	65	62	=COUNTIF(G\$2:G\$241,"<="&K28)-SUM(L\$25:L27)								27		
0	0	0	0	1	4	67	6	29	65-73	73	56	=COUNTIF(G\$2:G\$241,"<="&K29)-SUM(L\$25:L28)								28		
0	0	1	1	4	2	43	6	30	73-81	81	37	=COUNTIF(G\$2:G\$241,"<="&K30)-SUM(L\$25:L29)								29		
1	0	1	1	4	2	73	6	31	81-89	89	14	=COUNTIF(G\$2:G\$241,"<="&K31)-SUM(L\$25:L30)								30		
1	0	0	0	5	4	57	6	32	89-97	97	6	=COUNTIF(G\$2:G\$241,"<="&K32)-SUM(L\$25:L31)								31		
0	0	0	0	2	4	66	7	33	97-105	105	2	=COUNTIF(G\$2:G\$241,"<="&K33)-SUM(L\$25:L32)								32		
1	0	0	0	5	1	52	4	34										33				

0	0	0	0	3	5	57	8	35	J	K	L	M	N	O	P	Q	35
0	0	1	0	3	1	62	6	36	Step C2: Calculate count for each bin using FREQUENCY								36
1	1	0	1	3	1	54	5	37	a) Select L41:L49. <b>[Array function will not fill all rows unless this is done]</b>								37
1	0	1	0	3	3	67	6	38	b) In the formula bar, enter =Frequency(G\$2:G\$241, K41:K49) <b>[Don't press Enter]</b>								38
1	0	1	0	5	3	71	5	39	c) <b>Press and hold CTRL-SHIFT and then press ENTER: three-fingered CSE command.</b>								39
0	1	0	1	2	1	74	6	40	Range	BinMax	Count	Formulas under Count for each bin**					40
0	0	1	0	1	3	69	6	41	33-41	41	5	{=FREQUENCY(G\$2:G\$241,K41:K49)}					41
1	0	1	1	4	4	53	5	42	41-49	49	10	{=FREQUENCY(G\$2:G\$241,K41:K49)}					42
1	0	0	0	5	5	59	4	43	49-57	57	48	{=FREQUENCY(G\$2:G\$241,K41:K49)}					43
1	1	1	1	3	2	66	6	44	57-65	65	62	{=FREQUENCY(G\$2:G\$241,K41:K49)}					44
0	0	1	1	1	2	54	4	45	65-73	73	56	{=FREQUENCY(G\$2:G\$241,K41:K49)}					45
0	1	0	1	2	2	54	6	46	73-81	81	37	{=FREQUENCY(G\$2:G\$241,K41:K49)}					46
0	0	1	0	3	1	59	5	47	81-89	89	14	{=FREQUENCY(G\$2:G\$241,K41:K49)}					47
1	0	1	0	5	4	47	4	48	89-97	97	6	{=FREQUENCY(G\$2:G\$241,K41:K49)}					48
0	1	1	1	1	5	58	6	49	97-105	105	2	{=FREQUENCY(G\$2:G\$241,K41:K49)}					49
0	0	1	0	3	5	75	7	50	Note: The "squiggles" {braces} are computer-generated by this array command.								50
1	0	0	1	5	5	68	6		You cannot succeed if you try to type them in manually.								
0	1	1	0	5	1	75	4		1, 2, 3: Create Column Chart from Count or Frequency data (include ranges); Convert into Histogram.								

