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**Final Exam
HRM 3306**

Notes:

- Z-scores from the Z-Tables must be expressed as the full 4-digit number.
- When in doubt, go at least two places past the decimal when making calculations.

Measures of Central Tendency and Dispersion

1–3. John listens to a variety of music, including easy listening, classical, and pop/rock. These are the lengths of some of his personal songs (in minutes) for each of these categories:

Easy Listening	Classical	Pop/Rock
39	67	47
60	76	47
40	51	66
56	51	50
41	36	78
55		61
41		

For each group of music, identify the n, mean, mode, median, range, mean deviation and standard deviation. **Each answer is worth 1 point.** All answers should be expressed at one place past the decimal. Place your answers in the following table:

	Easy	Classical	Pop
n			
Mean			
Mode			
Median			
Range			
Mean Deviation			
Standard Deviation			

Normal Distributions for One Score

- 4-6. Find the following scores and their associated percentages **USING THE Z-TABLES IN YOUR TEXTBOOK AND ONLY USING "AREA BETWEEN MEAN AND Z."** Please write the number in its entirety (5 digits), and as a percent (that is, $1.00 = 34.134\%$, not $.34134$ [and certainly not $.34134\%$ —this is completely incorrect]). **Each answer is worth one point.**

1.58 _____%	2.43 _____%	-1.20 _____%
2.30 _____%	-1.34 _____%	-2.67 _____%
-0.81 _____%	-3.12 _____%	0.50 _____%
2.66 _____%	3.04 _____%	-1.30 _____%
-1.00 _____%	-1.61 _____%	1.78 _____%
1.87 _____%	-0.49 _____%	-2.77 _____%
0.05 _____%	-0.44 _____%	1.06 _____%

Z-Scores Scores on a Normal Distribution with $n = 1$

7. The average Alabama household subscribes to 4 magazines, with a standard deviation of 2.5. Your household subscribes to 5 magazines.

_____ (3 pts) Part 1: Based on this information, what is the z-score?

- | | |
|---------|---------|
| A. 0.4 | C. 2.5 |
| B. -0.4 | D. 0.63 |

_____ (3 pts) Part 2: Based on this information, what is the amount from the z-table?

- | | |
|------------|------------|
| A. 0.15542 | C. 0.49381 |
| B. 0.34463 | D. 0.30000 |

10. Every piece of M&M candy produced is supposed to weigh about 0.9 grams, with a standard deviation of about 0.03 grams. You wonder whether red M&Ms weigh more than the other colors, so you weigh a sample of 200 red M&Ms and discover their average weight is 0.902 grams.

_____ (2 pt) Part 1: What is the sample mean ($\bar{x}$)?

- A. 0.9
- B. 0.902
- C. 200
- D. 0.03

_____ (2 pts) Part 2: What is the population mean (μ)?

- A. 0.9
- B. 0.902
- C. 200
- D. 0.03

_____ (4 pts) Part 3: Based on this information, what is the standard error of the mean ($s_{\bar{x}}$)?

- A. 0.002
- B. 0.900
- C. 0.050
- D. 0.940

_____ (2 pts) Part 4: Based on this information, which of the following value is closest to z?

- A. 0.002
- B. 0.900
- C. 0.050
- D. 0.940

_____ (2 pts) Part 4: Based on this information, what is the amount from the z-table?

- A. 0.34134
- B. 0.31594
- C. 0.01995
- D. 0.32639

_____ (4 pts) Part 5: Based on your research, is your sample of M&Ms significantly different than that of the population?

- A. Yes
- B. No

Correlated Samples t-tests

The following is a printout from an Excel spreadsheet measuring the number of keystrokes per minute in a typing class.

t-Test: Paired Two Sample for Means		
	<i>Time 1</i>	<i>Time 2</i>
Mean	37.8	39.3
Variance	142.844	127.122
Observations	10	10
Pearson Correlation	-0.490	
Hypothesized Mean Difference	0	
df	9	
t Stat	-0.237	
P(T<=t) one-tail	0.409	
t Critical one-tail	1.833	
P(T<=t) two-tail	0.818	
t Critical two-tail	2.262	

_____ (3 pts) How many students participated in this test?

- A. 20
- B. 10
- C. 9
- D. 18

_____ (2 pts) What is the difference in the means between Time 1 and Time 2?

- A. 15
- B. 1.5
- C. 9
- D. -0.237

_____ (5 pts) If we assume a one-directional test, are our results significant?

- A. Yes
- B. No