**SPRING 2020 EXAM #1 KEY (3.3.20)**

**Anyone wishing to challenge a problem grade must provide a written defense of their response and why credit should be given for it.**

**1) A 2) B 3A) A 3B) D 4) B 5) A Tire (what was the source for the tire pressure?)**

**6) C 7) B 8) D 9) C 10) C 11) Systematic 12) B**

**13A) Humans Severely Abusing Environment 13B) 4 by 3 13C) 8.3%**

**13D) 26.3% 13E) 44 14) None**

**15A) 74, 187 AND ANY THREE NUMBERS SO THAT THE TOTAL = 500**

**15B) 74, 187, 70, AND TWO ADDITIONAL NUMBERS < 70**

**15B) 74, 187, 87, 87, 65**

**16) ∑X = 10 ∑Y = 26 ∑XY = 46 N = 5; SO, 5(46) ≠(5)(10)(26) >> 230 ≠ 1300**

**17) place temperatures in order; Median = 7.5o F**

**18A) 6.97% 18B) 70% 18C) 312.32 (312 or 313 accepted)**

**19) See Chart (after CA#4 is submitted)**

**20A)** $\_{3}=\frac{40!}{(40-3)!}=\frac{40\*39\*38\*37!}{37!}=\frac{40\*39\*38}{1}=59280 $**possible starting teams of 5 players**

**20B) Multiplication rule for independent events (could reuse a number) 403= 64000**

**21A) GROUPED 21B) Fruit Flies 21C) 40 21D) 6.4% (8/125)**

**22A) Pepper Pungency 22B) Quantitative, Continuous, Ratio 22C) 24 tabasco peppers**

**22D) MEAN =39.92 (x1000 Scoville units) MEDIAN = 39.5 (x1000 Scoville units)**

**22E) A or B accepted if given a reasonable rationale for the selection. As they are very close together, probably lean toward using the mean (24 pieces of data vs. 2 for the median). Mode is NEVER used as center of quantitative data.**

**22F)** Table: Max 51; Min 32; Range 19; 19//5 = 3.8 => 4 width



**22G) APPROPRIATE CHART VIA SPSS: Histogram, Freq. polygon, stem-and-leaf, ogive (here not attached to base); dot plot (not shown)**

**22H) GIVEN HIS 43,000 SCOVILLE UNITS LEVEL REQUIREMENT, HE NEEDS TO FIND A SOURCE OF PEPPERS THAT PROVIDE THIS HOTNESS LEVEL**



Tabasco Pepper Pungencies (Scoville Units)

Stem-and-Leaf Plot (SPSS output)

 Frequency Stem & Leaf

 1.00 3 2

 11.00 3 55677889999

 10.00 4 0001122344

 1.00 4 6

 1.00 Extremes (>=51)

 Stem width: 10.00

 Each leaf: 1 case(s)

