

Answers to Old Final

- 1) min=62, $Q_1=64$, $Q_2=69$, $Q_3=80$, max=99; stem-and-leaf plot; clearly right-skewed
- 2) The mode is Catholic.
- 3) The standard deviation of the sampling distribution decreases.
- 4) Becomes narrower.
- 5) mean=6, variance=10
- 6) 0.745; 0.716; not independent; class may not be "typical", sampling method may not have been good
- 7) 10/36
- 8) 0.7380
- 9) -1.18

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10) 0.3174; $z < -2.575$ or $z > 2.575$

11) 0.0158

12) 0.9842

13) It has a normal distribution with the same mean as the population distribution but with a smaller standard deviation.

14) If we repeatedly draw samples of the same size from the same population, then 95% of the times we will obtain a confidence interval that includes the population mean :.

15) In repeated sampling, 90% of the intervals constructed would contain the population mean.

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16) 39

17) Burrito 1 and Burrito 2 do not differ significantly in protein content.

18) A one-tailed test should be utilized.

19) $H_0: \mu_F - \mu_M = 0$ VS. $H_1: \mu_F - \mu_M > 0$

19) Get $t=5.38$, approximating with a z , the p -value is less than 0.002

20) The probability of observing a sample mean at least as large as 108 from a population whose mean is 100 is 0.074.

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21) Rejecting a null hypothesis that is false.

22) 23.2 ± 3.14

23) 0.743 ± 0.013

24) An incorrect decision when the null hypothesis is true.

25) Get sample (SRS) of people, find their average daily fat intake, test $H_0: \mu=81.4$ VS. $H_1: \mu \neq 81.4$; Type I error would be convicting an innocent individual and a type II error would be acquitting a guilty individual.