

CP Statistics – Chapter Final Exam Review – Free Response Questions
Show all necessary work. Write clearly and completely

1. A doctor randomly selects 40 of his patients aged 20-29 and records their serum HDL cholesterol levels. The results are shown in the table below.

70	56	48	48	53	52	66	48	36	49
28	35	58	62	45	60	38	73	45	51
56	51	46	39	56	32	44	60	51	44
63	50	46	69	53	70	33	54	55	52

- a) Display these data in a stemplot. Be sure it is properly labeled.
- b) Describe the features of this graph. Remember your SOCS.
2. The weights of healthy adult male Labrador Retrievers are approximately Normally distributed with a mean of 77 pounds and a standard deviation of 6 pounds. Use z-scores and Table A to answer the following.
- a) Sketch a normal curve labeling 1, 2 and 3 standard deviations from the mean.
- b) What percentage of healthy adult male Labrador Retrievers weigh less than 70 lbs?
- c) What percentage of healthy adult male Labrador Retrievers weigh more than 90 lbs?
3. The following data pertain to the number of bacteria present in a petri dish at various times in a laboratory experiment.

Hours (x)	1	2	3	4	5
Bacteria (y)	120	135	150	185	200

- a) Write a linear equation that represents the relationship between these variables?
- b) How many bacteria will be present after 8 hours?
- c) How many bacteria were in the dish at the beginning of the experiment?
- c) What is the hourly rate of increase in bacteria?

CP Statistics – Chapter Final Exam Review – Free Response Questions
Show all necessary work. Write clearly and completely

4. A college psychology professor wants to randomly select 40 of her 200 freshman psychology students to participate in an experiment. She is considering two methods: (1) a simple random sample (SRS) and (2) a stratified random sample, by gender.

a) Use the table of random digits below to select the first 5 student numbers for an SRS.

Line 135 66925 55658 39100 78458 11206 19876 87151 31260
Line 136 08421 44753 77377 28744 75592 08563 79140 92454
Line 137 53645 66812 61421 47836 12609 15373 98481 14592

b) Briefly describe a process for selecting a stratified random sample in this setting.

5. All human blood can be “ABO” typed as belonging to one of A, B, O, or AB types. The actual distribution varies slightly among different groups of people, but for a randomly chosen person from North America, the following are the approximate probabilities.

Blood Type	O	A	B	AB
Probability	.45	.40	.11	.04

a) Give 2 reasons why the above is a legitimate probability model.

If a person from North America is selected at random, what is the probability that...

- b) they do not have Type O blood?
c) they have Type A or Type B blood?

If two people from North America are selected at random, what is the probability that...

- d) the first one has Type A blood and the second has Type B blood?
e) they both Type AB blood?