IT3030 Biostatistics Exam #1 (2022.04.11)

57
回應
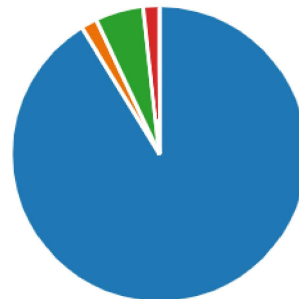
84.6
平均分數

已關閉
狀態

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1. Gender (male / female) is under what category of variables? (Check one answer) (3 點)
   91% 的回應者 (52/57) 已正確回答此問題。

🔵 Categorical nominal	52	✓
🟠 Categorical ordinal	1	
🟢 Categorical discrete	3	
🔴 Numerical continuous	1	

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2. Weight is measured in Kgs (公斤). What is the category of this variable? (Check one answer) (3 點)
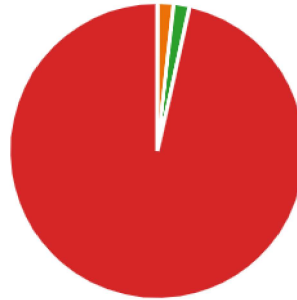   84% 的回應者 (48/57) 已正確回答此問題。

🔵 Numerical discrete	1	
🟠 Numerical continuous	48	✓
🟢 Numerical ordinal	5	
🔴 Categorical ordinal	3	

3. Given a histogram as shown. What is the cumulative frequency of the class interval (5
   25 − 30?   點)
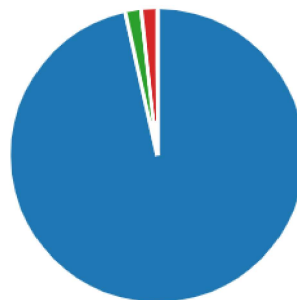   96% 的回應者 (55/57) 已正確回答此問題。

🔵 20	0	
🟠 60	1	
🟢 80	1	
🔴 90	55	✓

4. Which of the followings is the correct definition of sensitivity when doing a diagnosis (3
   test? (Assuming we have TP: True Positive, FP: False Positive, TN: True Negative, FN: 點)
   False Negative.
   96% 的回應者 (55/57) 已正確回答此問題。

🔵 TP/(TP+FN)	55	✓
🟠 TN/(TN+FP)	0	
🟢 TP/(TP+FP)	1	
🔴 TN/(TN+FN)	1	

5. Given the ROC curve as shown. What quantity is in the horizontal axis, and what is (3
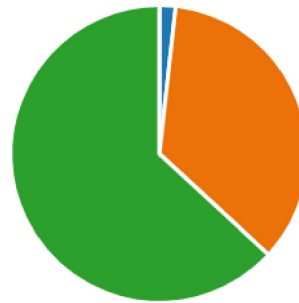   in the vertical axis?   點)
   88% 的回應者 (50/57) 已正確回答此問題。

🔵 (sensitivity, specificity)	1	
🟠 (sensitivity, 1-specificity)	3	
🟢 (1-sensitivity, specificity)	3	
🔴 (1-specificity, sensitivity)	50	✓

6. Randomly choosing 20 newborns, each one is 50% either a boy or a girl. What is the probability of having 10 baby girls out of these 20 newborns? (5 點)

63% 的回應者 (36/57) 已正確回答此問題。

|			
🔵	0.2456	1	
🟠	0.5000	20	
🟢	0.1726	36	✓
🔴	1.0000	0	

7. A test for confirming a COVID-19 infection leads to the following results. Among 100 people tested, 45 were tested positive. Among those 45, only 30 were actually confirmed cases based on PCR. Among the remaining people tested negative, there were 50 who were actually free from the infection. What is the false negative (FN) count for this test? (5 點)

88% 的回應者 (50/57) 已正確回答此問題。

🔵	5	50	✓
🟠	15	6	
🟢	25	1	
🔴	35	0	

8. A Bernoulli trial uses a random variable to describe the result, which contains only two possible outcomes. Such a random variable is known as: (3 點)

68% 的回應者 (39/57) 已正確回答此問題。

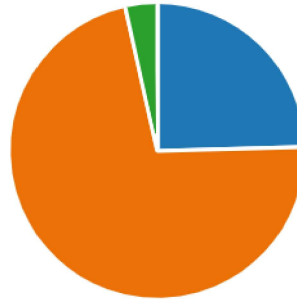|			
🔵	unary	1	
🟠	binary	13	
🟢	dichotomous	39	✓
🔴	two-dimensional	4	
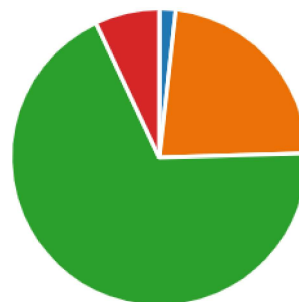
9. Given a Poisson distribution as shown. Which one of the followings is the most possible value of lambda used to describe such distribution? (3 點)
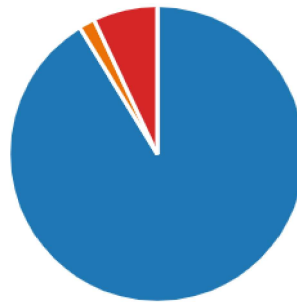
72% 的回應者 (41/57) 已正確回答此問題。

🔵 0.5	14
🟠 2.5	41 ✓
🟢 5.5	2
🔴 6.5	0

10. What are the two parameters describing a normal distribution? (3 點)

91% 的回應者 (52/57) 已正確回答此問題。

🔵 (mean value, standard deviation)	52 ✓
🟠 (median value, variance)	1
🟢 (interquartile range, standard de…	0
🔴 (median value, standard deviati…	4

11. Given three normal distributions as shown. Which one has the largest area under curve? (3 點)

89% 的回應者 (51/57) 已正確回答此問題。

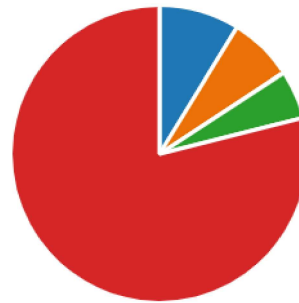|	
🔵 Red	5
🟠 Black	1
🟢 Green	0
🔴 All three are the same	51 ✓
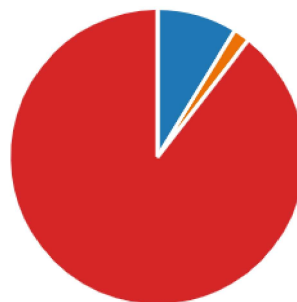
12. Which of the followings is NOT CORRECT regarding a standard normal distribition? (3 點)

79% 的回應者 (45/57) 已正確回答此問題。

- 🔵 The distribution is symmetric in ... 5
- 🟠 The mean value is zero 4
- 🟢 The standard deviation is 1 3
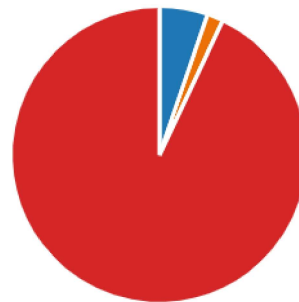- 🔴 The maximum height of this dist... 45 ✓

13. An integration of a standard normal distribution from -2 to +2 would most likely arrive at which of the following values? (4 點)
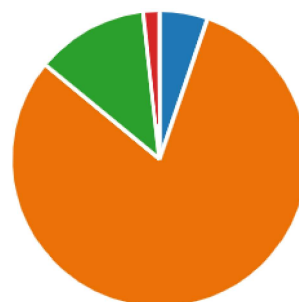
93% 的回應者 (53/57) 已正確回答此問題。

- 🔵 0.65 3
- 🟠 0.75 1
- 🟢 0.85 0
- 🔴 0.95 53 ✓

14. The first stage in statistics is the data: (3 點)

81% 的回應者 (46/57) 已正確回答此問題。

- 🔵 analyzing 3
- 🟠 collection 46 ✓
- 🟢 organization 7
- 🔴 summarization 1

15. Which of the followings is under descriptive statistics? (3 點)

74% 的回應者 (42/57) 已正確回答此問題。

🔵 Diagnostic test	7
🟠 Evaluating conditional probability	3
🟢 Summarization of data	42 ✓
🔴 Confidence interval estimation	5

16. What measure of central tendency is the midpoint of the data? (3 點)
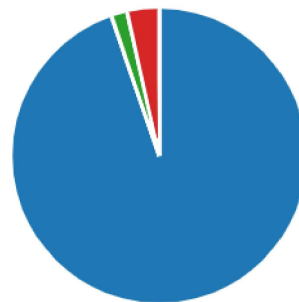
88% 的回應者 (50/57) 已正確回答此問題。

🔵 Mode	4
🟠 Mean	3
🟢 Median	50 ✓
🔴 Variance	0

17. What is the mode of data scores: 2, 2, 2, 3, 4, 5? (3 點)

95% 的回應者 (54/57) 已正確回答此問題。

🔵 2	54 ✓
🟠 3	0
🟢 4	1
🔴 5	2

18. A standard normal distribution is: (3 點)
91% 的回應者 (52/57) 已正確回答此問題。

🔵 skewed to the left	0
🟠 having mean value 1.0	1
🟢 having standard deviation 0.0	4
🔴 having variance 1.0	52 ✓

19. A histogram is used to describe: (3 點)
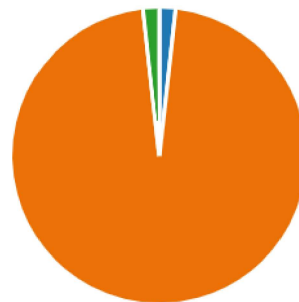49% 的回應者 (28/57) 已正確回答此問題。

🔵 quantitative data of a group of ...	28 ✓
🟠 qualitative data of a group of pa...	8
🟢 data collected on nominal scale	5
🔴 data collected on ordinal scale	16

20. Given a left-skewed curve as shown. Which of the followings is true? (3 點)
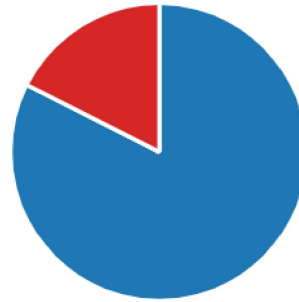96% 的回應者 (55/57) 已正確回答此問題。

🔵 mean = median	1
🟠 mean < mode	55 ✓
🟢 mean > mode	1
🔴 mean = mode	0

21. Which of the followings is most influenced by extremes (極端值)? (3 點)
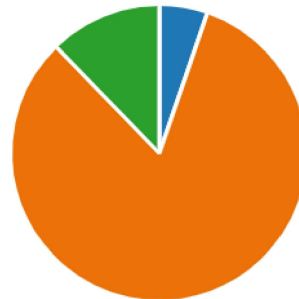82% 的回應者 (47/57) 已正確回答此問題。

🔵 mean	47	✓
🟠 median	0	
🟢 mode	0	
🔴 range	10	

22. What is the most frequently observed value? (3 點)
82% 的回應者 (47/57) 已正確回答此問題。

🔵 range	3	
🟠 mode	47	✓
🟢 mean	7	
🔴 median	0	

23. What is the numeric expression of all existing cases of a disease or health condition in a population? (3 點)
75% 的回應者 (43/57) 已正確回答此問題。

🔵 prevalence	43	✓
🟠 incidence	4	
🟢 morbidity	7	
🔴 mortality	3	

24. Which normal distribution best describes the data with mean value of 120 and standard deviation of 5? (3 點)

84% 的回應者 (48/57) 已正確回答此問題。

🔵 black	0	
🟠 purple	1	
🟢 green	48	✓
🔴 cannot determine	8	

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25. A clinical trial is more valuable when: (3 點)

84% 的回應者 (48/57) 已正確回答此問題。

🔵 sensitivity and specificity have h...	48	✓
🟠 sensitivity is higher than specific...	3	
🟢 specificity is higher than sensitiv...	4	
🔴 sensitivity and specificity values ...	2	

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26. Which of the followings is NOT a dichotomous variable? (3 點)
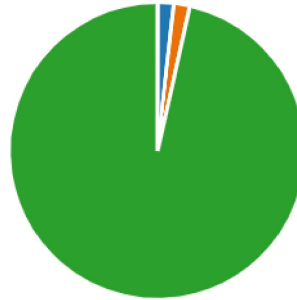
95% 的回應者 (54/57) 已正確回答此問題。

🔵 blood type	54	✓
🟠 flipping a coin	0	
🟢 result of an election	2	
🔴 biological sex gender	1	
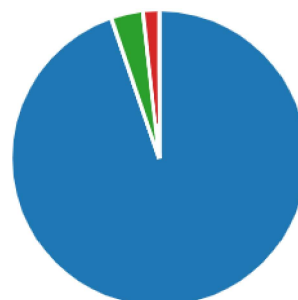
27. Which of the followings is a very small or very large value relative to the majority (3 點)
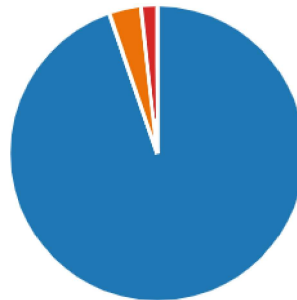   of the observations in a data set?

    96% 的回應者 (55/57) 已正確回答此問題。

🔵 quartile	1	
🟠 median	1	
🟢 outlier	55	✓
🔴 IQR	0	

28. The quartiles for blood pressure are Q1=108, Q2=116, Q3=127. Which of the (3 點)
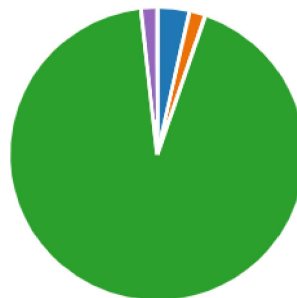   followings is likely to be an outlier?

    95% 的回應者 (54/57) 已正確回答此問題。

🔵 180	54	✓
🟠 150	2	
🟢 128	0	
🔴 100	1	

29. What is the z-score for blood pressure = 140, assuming that the blood pressure has (3 點)
    a normal distribution with a mean value of 128 and standard deviation of 12.5?

    93% 的回應者 (53/57) 已正確回答此問題。

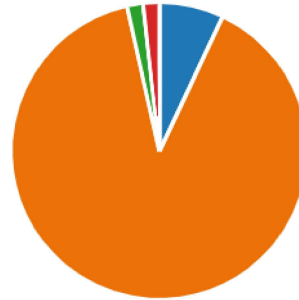|		
🔵 0.75	2	
🟠 0.84	1	
🟢 0.96	53	✓
🔴 1.28	0	
🟣 其他	1	

30. Which of the followings is a correct MATLAB function to use to get the accumulative probability for a binomial distribution? (3 點)

89% 的回應者 (51/57) 已正確回答此問題。

🔵 binopdf	4	
🟠 binocdf	51	✓
🟢 binoinv	1	
🔴 binostat	1	

31. Determine the interquartile range for the data set {3, 7, 8, 5, 12, 14, 21, 13, 18}. (3 點)

74% 的回應者 (42/57) 已正確回答此問題。

🔵 5	4	
🟠 7	42	✓
🟢 9	6	
🔴 11	5	