

Try again once you are ready

TO PASS 70% or higher

Try again

GRADE
53.84%

Full Entrance Assessment - Attempt 1

LATEST SUBMISSION GRADE

53.84%

- What type of bias would be introduced if an American yacht and private island magazine polled their readers about life satisfaction and then later published an article about life satisfaction among all Americans using the data gathered from the poll?

1 / 1 point

 Correct

- Construct the least squares regression line based in the following output:

2 / 2 points

Call:

`lm(formula = satisfaction ~ free_time, data = happiness)`

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 0.32412 2.34381 0.101 0.891

free_time 0.28940 0.12039 3.021 0.0096 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 '' 1

Correlation Matrix:

satisfaction free_time

satisfaction 1.0000000 0.5993325

free_time 0.5993325 1.0000000

Please, structure your response as $y = _ + _x$ so, for example, if the value of b_0 was 1.301 and the value of b_1 was 0.422, then your answer would be: $y = 1.301 + 0.422x$. Please round values to the third decimal place.

 Correct

- Use the following information to determine your answer: A survey was sent out to compare the proportion of women and men who use a search engine to find information about health issues (1 = women and 2 = men). The following data was obtained from those who responded.

1 / 1 point

	Search engine was used?	Search engine was used?	
Group	Yes	No	Total
1 = Women	246	128	374
2 = Men	147	102	249

This survey was done specifically to test the suggestion that the proportion of women who use a search engine to find information about health is not equal to men who do the same. Which of the following represents the hypotheses that we will be testing, assuming that p_1 represents the population proportion of all women who use a search engine to find information about health and that p_2 represents the population proportion of all men who use a search engine to find information about health.

 Correct

- Which of the following p-values would make the following statement true. Select as many as apply:

0 / 2 points

Evidence against the null hypothesis is significant at the 5% level but not at the 1% level.

 Incorrect

- The city council for a small city is curious how much candy on average is given out in their two largest neighborhoods on Halloween. They suspect that there is no difference, but they want to be sure. However, they must conduct a study to determine if that is true. From a sample of 43 children's candy baskets in neighborhood A, the sample mean is 53 pieces of candy and the sample standard deviation is 10 pieces of candy. From a sample of 49 children's candy baskets in

0 / 1 point

neighborhood B, the sample mean is 60 pieces of candy and the sample standard deviation is 7 pieces of candy. Assume that a pooled approach is necessary.

Assume that sample1 comes from neighborhood A and sample2 comes from neighborhood B.

Compute the 95% confidence interval. Round to the fourth decimal point. Please enter your answer in the following format: (lower_value, upper_value)

Incorrect

6. Which of the following correlation coefficient values would match the following description:

1 / 1 point

little to no positive relationship

Correct

7. An experiment on choices was conducted which had children introduced to six different plants, with an emphasis on biodiversity. They then gave the children some time to interact with the plants, and afterwards, asked them what they would plant if they could plant 10 plants. Based on many results, the (partial) probability distribution below was determined for the discrete random variable X = number of unique plant species chosen (during a fixed time period).

2 / 2 points

X = # unique species	1	2	3	4	5	6
Probability	.10	--	.31	.16	.12	.09

Given that the child chooses at least 2 unique plant species, what is the probability that they choose 4 unique plant species? Please round to the second decimal point.

Correct

8. A random sample of 1277 residents over 21 from rural and urban areas were surveyed about their opinion on the legal drinking age. Below is the gathered data.

1 / 1 point

	Minimum age should be lowered	Minimum age should be higher	Minimum age is appropriate	Total
Rural	178	25	431	634
Urban	218	43	382	643
Total	396	68	813	1277
Pearson's Chi-square Test				
X-squared = 22.20	df = 2	p_value = ?		

Assuming there's no relationship between residential area and opinion on legal drinking age, how many people who live in an urban area would you expect to support a lower drinking age? Please round up to a whole number.

Correct

9. Which of the following graphs match the following distribution description?

1 / 1 point

unimodal, skewed to the right, no apparent outlier

Correct

10. Use the following information to determine your answer: The typical amount of time that Americans spend on a mobile phone each day has a bell-shaped distribution with a mean of 4 hours and a standard deviation of 1.2 hours.

1 / 1 point

About 95% of Americans spend a minimum of ___ hours a day and a maximum of ___ hours a day on their phones. Round your answers to the first decimal point. Please enter your answer in the following format: (min_value, max_value)

Correct

11. Which of the following list comprehensions will extract all gemstone names - and only the names - from the list of dictionaries called `gem_data` that have a hardness equal to or higher than 7.5. Select all that apply.

0 / 2 points

```
1 gem_data = [{"Name": "Alexandrite",
2     "Mohs Hardness": 8.5,
3     "Family": "Chrysoberyl"},  
4     {"Name": "Amethyst",
5     "Mohs Hardness": 7.0,
6     "Family": "Quartz"},  
7     {"Name": "Jargon",
```

```

8     "Mohs Hardness": 7.5,
9     "Family": "Zircon"},  

10    {"Name": "Diamond",
11        "Mohs Hardness": 10.0,  

12        "Family": "Diamond"},  

13    {"Name": "Nephrite",
14        "Mohs Hardness": 6.0,  

15        "Family": "Jade"},  

16    {"Name": "Jade",
17        "Mohs Hardness": 6.0,  

18        "Family": "Jade"},  

19    {"Name": "Topaz",
20        "Mohs Hardness": 8.0,  

21        "Family": "Topaz"},  

22    {"Name": "Zircon",
23        "Mohs Hardness": 7.5,  

24        "Family": "Quartz"},  

25    {"Name": "Rose Quartz",
26        "Mohs Hardness": 7.0,  

27        "Family": "Quartz"},  

28    {"Name": "Spinel",
29        "Mohs Hardness": 8.0,  

30        "Family": "Spinel"}]
31

```

Incorrect

12. Which of the following lines of code will sort the list of dictionaries called "instruments" by the values stored in the key `principal_chair_name` from A to Z?

1 / 1 point

Correct

13. Which of the following functions takes in two parameters, a string and an integer, extracts the character at the n'th position (dictated by the integer parameter) from the string, and returns a dictionary where the original string is the key and the extracted character is the value? Select all that apply.

0 / 2 points

Incorrect

14. Assume that we have some dictionaries (stored in the variable called "diction_to_save") that we would like stored in a json formatted file. We want to call the json file "previous_data.json". Which solution would store the python object into a json file? Assume that json has been imported in each case. Select all that apply.

0 / 1 point

Incorrect

15. Which of the following while loops contain an error or infinite loop? Select as many as apply.

0 / 1 point

Incorrect

16. Below is a class called MuseumPiece. Instances of the class represent data about a piece belonging to a museum. Which of the following solutions correctly changes the storage location of a MuseumPiece instance to "Room 103B"?

0 / 1 point

```

1  class MuseumPiece():
2      def __init__(self, id_num, department, date, geo_location, materials = []):
3          self.id_number = id_num
4          self.department = department
5          self.date = date
6          self.location = geo_location
7          self.materials = materials
8
9      def change_display_location(self, location):
10         self.display = location
11
12     def change_storage_location(self, location):
13         self.storage = location
14
15 example = MuseumPiece("40.3.2", "Egyptian Art", "ca. 1981-1975 B.C.", "Egypt", ["Faience", "Lip
16

```

Incorrect

17. Which of the following functions is least likely to break if there is an error when extracting the value associated with 'y' from the dictionary, 'x'?

1 / 1 point

✓ Correct

18. Please provide a conditional that would replace None so that the following code successfully iterates through the data stored in the variable "photo_data" and extracts the value from the key "post_id" and stores the value in the variable called 'posts' only if the caption has a hashtag in it (hashtags always start with #).

```
25     ],
26     {"user_id": 887963709525,
27      "post_id": "0083F78HK03P",
28      "contents_": "#relaxing in the garden today!",
29      "likes": {"count": 2,
30                "users": [...]},
31      "replies": {"count": 0,
32                  "users": []}
33    },
34    {"user_id": 489493831182,
35      "post_id": "K9LN4578TS98",
36      "contents_": "Does anyone know someone with a 734-###-#### number?",
37      "likes": {"count": 2,
38                "users": [...]},
39      "replies": {"count": 0,
40                  "users": []}
41    },
42    {"user_id": 8173829496,
43      "post_id": "AJYB790KJY752B",
44      "contents_": "Marketplace is busy today, hopefully the deals are good! #crowd",
45      "likes": {"count": 11,
46                "users": [...]},
47      "replies": {"count": 21,
48                  "users": [...]}}
49  ]
50 }
51
52 posts = []
53 for item in photo_data['resp']:
54   if len([word for word in item["contents_"].split() if word.startswith("#")]) > 0:
55     posts.append(item["post_id"])
56
```

0 / 2 points

✗ Incorrect

19. Python Notebook Question: What is the type of patent_data?

1 / 1 point

✓ Correct

20. Python Notebook Question: What is the value assigned to most_recent_patent?

1 / 1 point

✓ Correct