

ADVANCEKENTUCKY 2020 AP® STATISTICS MOCK EXAM FREE-RESPONSE QUESTIONS

STATISTICS

SECTION II

Question 2

Spend 15 minutes on this part of the exam.

Percent of Exam Weight – 45

Directions: Show all your work. Indicate clearly the methods you use, because you will be scored on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

AP Statistics Formula Sheet: You may print and access the formula sheet during this exam.
(<https://apcoronavirusupdates.collegeboard.org/media/pdf/formula-sheet-and-tables-2020.pdf>)

2. An advertising agency in a large city is conducting a survey of adults to investigate whether there is an association between the highest level of education achievement and primary source for news. The company takes a random sample of 1000 adults in the city. The results are shown in the table below.

Primary Source for News	Highest Level of Education Achievement			TOTAL
	Not a High School Graduate	High School Graduate but not a College Graduate	College Graduate	
Newspaper	26	70	81	177
Television	110	230	96	436
Internet	22	140	105	267
None	42	60	18	120
TOTAL	200	500	300	1000

(a) Use the table to answer the following.

- (i) What is the probability a randomly selected adult from this sample is a college graduate?

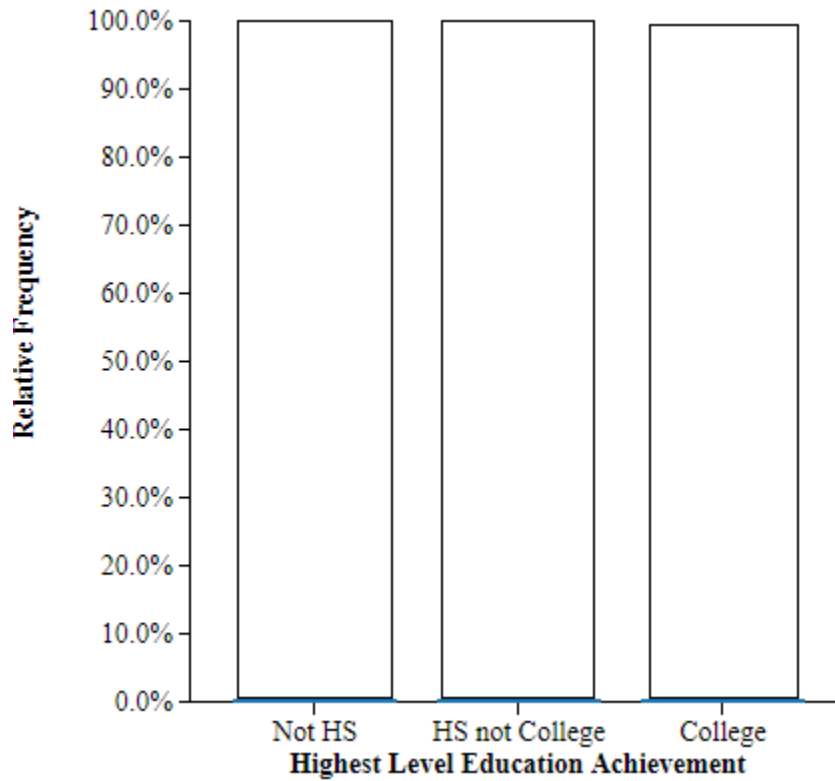
- (ii) What is the probability a randomly selected adult from this sample is a college graduate or uses television as their primary news source?

This question was adapted from a past, released AP Statistics Exam Question.

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- (iii) What is the probability a randomly selected adult from the sample uses television as their primary news source and is a college graduate?
- (iv) If an adult who uses television as their primary news source is to be selected at random from this sample, what is the probability they will be a college graduate?
- (b) When selecting an adult at random from this sample, are the events “college graduate” and “obtains news primarily from television” independent? Justify your answer.

(c) Complete the graph below to show the distributions of primary news source by highest level of education received.



Does the graph support or refute your answer to part (b)? Explain.