

Question 1: Concept Application**7 points****General Considerations**

- Answers must be cogent enough for the meaning to come through. Spelling and grammatical mistakes do not reduce a score, but spelling must be close enough so that the reader is convinced of the word.
- A response can earn points only if the student clearly conveys what part of the question is being answered. It is possible to infer the part of the question being answered if it is consistent with the order of the question.
- The response must apply the concept to the prompt. A definition alone will not earn the point, but a clear definition can support the application.
- Examples provided in the Scoring Guidelines for each of the points are not to be considered exhaustive.
- Within a point, a response will not be penalized for incorrect information unless it *directly contradicts* correct information that would have otherwise earned a point. For example, if a response applies a concept in two contradictory ways (such as identifying both the independent and dependent variables as the independent variable or describing proactive interference as interference from both older and newer information), the point is not earned.

NOTE: In certain cases, a response will not score if it includes a correct answer amongst multiple incorrect answers related to the same general concept/theory (e.g., a response that describes the Big Five trait of conscientiousness as being diligent, trusting, highly emotional, outgoing, and intellectually curious).

- Within a bulleted question part, if the response addresses details from a scenario other than the one in the prompt, the point is not earned.

Part A Gavin's parents took him to his favorite science museum, and he explored all of the exhibits. One of the interactive exhibits featured glass marbles. He grabbed a large marble and tried to bounce it on the ground. At one point during the visit, he became separated from his parents, and it took a few minutes for them to find him. Later that night, he drew a colorful picture of the exhibits at the museum. The next day, Gavin brought his picture with him to preschool. While his grandmother drove, Gavin talked to her about the picture.

Explain how Jean Piaget's concept of assimilation could relate to Gavin's experience with the glass marble.

1 point

Response must indicate that Gavin attempts to treat the glass marbles like "balls" by trying to bounce them on the ground.

Acceptable explanations include:

- Gavin thought the marble would bounce like all other balls.

Unacceptable explanations include:

Responses that refer to schema accommodation.

- Gavin now has a schema for "glass marbles" and knows they don't bounce like "balls."
- Gavin thought the marbles were like bouncy balls, so he tried to bounce them. Then he changed his schema when he learned that glass marbles are different and cannot be bounced.

Explain how egocentrism could relate to how Gavin interacted with his grandmother in the car.

1 point

Response must indicate that Gavin only considers his own perspective or assumes that others know what he knows when interacting with his grandmother.

Acceptable explanations include:

- Gavin holds up the picture in a way where he is the only one who can see it, but he thinks his grandmother can see it.
- Gavin talks about the museum trip from his perspective and doesn't recognize his grandmother is busy driving.

Unacceptable explanations include:

The response refers to Gavin being selfish.

- Gavin does not care what his grandma thinks because all he cares about is the picture he drew.

The response refers to Gavin telling his grandmother about the experience without referencing a lack of perspective.

- Gavin tells his grandmother all about the trip to the museum.

Explain how avoidant attachment could relate to Gavin when he was separated from his parents.

1 point

Response must indicate a lack of distress when separated from his parents.

Acceptable explanations include:

- Gavin didn't get upset or cry when he was separated from his parents.
- When separated from his parents, Gavin spent the time playing by himself at different exhibits.

Unacceptable explanations include:

- Gavin was very fearful and anxious when his parents left him.

Part B Explain how each of the following terms could relate to Gavin in this scenario.

Serial position effect**1 point**

Response must indicate that Gavin recalls information from the beginning or ending of his experience better than information that is in the middle of his experience at the museum.

Acceptable explanations include:

- Gavin remembered the exhibits he visited at the beginning of the day better.
- Gavin remembered the exhibits he visited at the end of the day better.
- Gavin had trouble remembering which exhibits he visited in the middle of the day.
- Gavin remembered the exhibits he visited at the beginning and end of the day better than the ones in the middle of the day.

Unacceptable explanations include:

Responses that refer to primacy or recency effects without reference to better recall.

- Gavin remembered the exhibits he visited at the beginning of the day.

Motor cortex**1 point**

Response must indicate that Gavin's motor cortex controls his movements.

Acceptable explanations include:

- *Gavin uses more of his motor cortex to use his fingers to draw the picture.*
- *Gavin uses his motor cortex to grab the marble.*

Unacceptable explanations include:

- *Gavin moves a lot when he plays.*

Cognitive map**1 point**

Response must indicate that Gavin formed a mental picture/layout/orientation/representation of the museum or another location related to the scenario.

Acceptable explanations include:

- *Gavin remembered where the entrance was to the museum because of his mental map.*
- *Gavin has created a mental picture of the museum to help him draw an accurate picture of the layout.*

Unacceptable explanations include:

- *Gavin creates a cognitive map that helps him navigate around the museum.*

Cones in the retina**1 point**

Response must indicate that Gavin's cones allow him to see color and/or detail (e.g., acuity, clarity, sharpness of vision).

Acceptable explanations include:

- *Gavin is able to create his picture because the cones in his retina enable him to see color and detail.*

Unacceptable explanations include:

- *Gavin uses his cones to see well.*
- *Gavin can see movement out of the corner of his eye.*

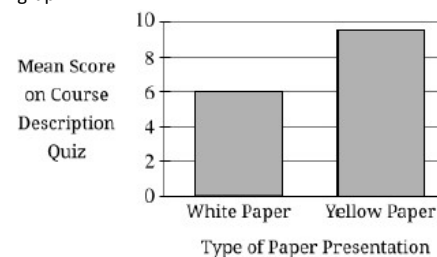
Total for question 1 7 points**Question 2: Research Design****7 points****General Considerations**

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NOTE: In certain cases, a response will not score if it includes a correct answer amongst multiple incorrect answers related to the same general concept/theory (e.g., a response that describes the Big Five trait of conscientiousness as being diligent, trusting, highly emotional, outgoing, and intellectually curious).

6. Within a bulleted question part, if the response addresses details from a scenario other than the one in the prompt, the point is not earned.

Part A Professor Gonzalez hypothesizes that students will remember more information from his detailed course description if it is printed on yellow paper than if it is printed on standard white paper. To test this hypothesis, he put the names of all his students into a bowl, then drew out names to assign them to two different groups. He gave one group of the students in his class a course description printed on white paper and gave the other group of students a course description printed on yellow paper. Students were instructed to thoroughly read the description outside of class in preparation for their next class. In the next class, he gave all students a ten-question quiz asking them about the information found on the course description. Professor Gonzalez then compared the number of correct answers for each group of students. The statistically significant results are depicted in the graph.



State the operational definition of the dependent variable.**1 point**

Response must indicate that the dependent variable is operationally defined as the student's score on the course description quiz.

Acceptable explanations include:

- *The dependent variable is operationally defined as the score on the course description quiz.*
- *The dependent variable is the quiz score/grade on the quiz.*
- *The number of correct answers on the quiz is the dependent variable.*

Unacceptable explanations include:

- *The dependent variable is the type of paper used.*
- *The student's result on the quiz, and that's the dependent variable.*
- *The mean score on the quiz.*

Identify the experimental group.**1 point**

Response must indicate that the experimental group is the group with the course description printed on yellow paper.

Acceptable explanations include:

- *The experimental group is the people who have the yellow paper.*

Unacceptable explanations include:

Responses that state the yellow paper without indicating the people/group.

- *The experimental group is the yellow paper.*

Responses that state a control group instead of an experimental group.

- *Example: The control group is the group with the yellow paper.*

References to taking the quiz on yellow paper do not score.

In addition to the manipulation of an independent variable, identify the procedure Professor Gonzalez used to make this study a true experiment.**1 point**

Response must indicate that the procedure used to make this a true experiment is random assignment.

Acceptable explanations include:

- *Professor Gonzalez randomly assigned the participants to groups.*
- *Professor Gonzalez put people in groups randomly.*
- *Professor Gonzalez puts the names of all students into a bowl and pulls them out of a bowl.*

Unacceptable explanations include:

Responses that refer to random selection/sampling.

- *Professor Gonzalez used random selection to make this a true experiment.*

Explain how the data as presented in the graph do or do not support Professor Gonzalez's hypothesis.**1 point**

Response must indicate that data support the hypothesis because the experimental group (i.e., the yellow paper group) scored higher on the test.

Acceptable explanations include:

- *Professor Gonzalez thought that the experimental group would score higher, and they did, so the data support the hypothesis.*
- *The bar for the yellow paper group is higher than the bar for the white paper group, which supports the hypothesis.*
- *The control group/white paper group scored lower than the experimental group/yellow paper group, which is what Professor Gonzalez expected.*

Unacceptable explanations include:

Responses that do not provide an explanation for data supporting the hypothesis.

- *The data do not support the hypothesis.*
- *The data **support the hypothesis** (needs to make clear what the hypothesis was).*

Part B Explain how each of the following might relate to a student's performance on any quiz.**Context-dependent memory****1 point**

Response must indicate that the student's memory retrieval is affected if some external element (e.g., room, sensory cues, equipment) that is present when the information was learned/encoded is present/the same or absent/not the same as when they take a quiz.

Acceptable explanations include:

- *If students learn the information in a particular classroom, they should take a quiz in that same classroom so they can use the surroundings to cue them for their memories.*
- *If a student chews gum while studying, they should chew gum while taking a quiz.*
- *If students sit in different seats taking the quiz than when they learned that information, they will do worse on the quiz.*

Unacceptable explanations include:

- *Students must consider context in order to remember things well enough for their quiz.*

Responses that refer only to mood-dependent or state-dependent memory.

- *If a student is happy while learning the information, they will do better if they are happy when they take the quiz.*

Yerkes-Dodson law**1 point**

Response must indicate that students would perform best under a level of optimal arousal.

OR

Response must indicate that students would perform worse if they were under- or over-aroused.

Synonyms for “under-aroused” can include a reference to the amount (e.g., too little, under, insufficient).

Synonyms for “over-aroused” can include a reference to the amount (e.g., too much, overly, super).

Acceptable explanations include:

- *Students might be too aroused on the quiz, so they don't do well.*
- *Students may be at their optimal arousal, so they end up doing well on the quiz.*
- *Students are extremely disinterested/very bored in the class, so they don't do well on a quiz.*
- *Students who have a high level of arousal perform poorly on the quiz.*

Unacceptable explanations include:

Responses that refer to arousal without quantity (i.e., too much, too little).

- *Students may be relaxed, so they do well on the quiz.*
- *Students who are excited do poorly on the quiz.*

Low level of the Big Five trait of conscientiousness**1 point**

Response must indicate that a low level of an enduring characteristic of conscientiousness would hinder student performance on the quiz (e.g., not being diligent, being less hardworking, being unorganized, being undisciplined, being irresponsible, being unprepared, etc.).

Acceptable explanations include:

- *Students who aren't hardworking may be hindered from doing well on the quiz.*

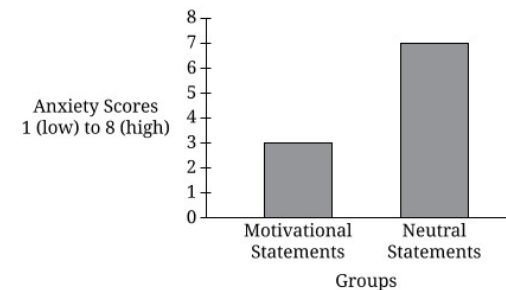
Unacceptable explanations include:

- *Students who are diligent do better on the quiz.*
- *Students who did not study hard did poorly on the quiz.*

Total for question 2 7 points**Question 2: Research Design****7 points****General Considerations**

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6. Within a bulleted question part, if the response addresses details from a scenario other than the one in the prompt, the point is not earned.

Part A Dr. Dawson is a psychologist who believes that students who read motivational statements before a test will experience lower levels of anxiety as compared with students who read neutral statements. To examine this belief, he conducted a study. In the study, he randomly assigned half of the participants to read motivational statements and the other half to read neutral statements. Immediately after reading the statements, all of the students completed a survey about their current level of anxiety (1 = low; 8 = high) and then took the test. Dr. Dawson found statistically significant results that are depicted in the graph.



State a valid operational definition of the dependent variable in this study.**1 point**

Response must indicate that anxiety is defined by their score on the scale/survey of their anxiety.

Acceptable explanations include:

- *The dependent variable can be operationally defined as the score on the anxiety scale.*
- *The dependent variable is the score on the scale/survey.*
- *The dependent variable is the anxiety score from 1 to 8 (or 1 to 10).*

Unacceptable explanations include:

Responses that do not mention the scale/survey.

- *The operational definition is the level of anxiety.*
- *The operational definition is the anxiety score.*

Identify the control group in this study.**1 point**

Response must indicate that the control group is the group that reads the neutral statements.

Acceptable explanations include:

- *The control group is the group that reads neutral statements.*
- *The control group is the group that does not read positive statements.*

Unacceptable explanations include:

Responses that indicate the experimental group.

- *The control group is the group that reads the positive statements.*
- *The control group is the group that does not read the neutral statements.*

Explain why the study would be considered an experiment.**1 point**

Response must indicate that the study is experimental because an independent variable is manipulated, and/or the participants were randomly assigned to the groups in the study.

Acceptable explanations include:

- *The study is experimental because the students are randomly assigned to two conditions.*
- *The study is an experiment because a variable was manipulated.*

Unacceptable explanations include:

The response indicates random selection/sampling.

- *The study is experimental because they were randomly chosen to participate.*
- *The study is experimental because it tests a hypothesis.*

Explain how the results of the study do or do not support Dr. Dawson's hypothesis.**1 point**

Response must indicate that Dr. Dawson's hypothesis is supported because either the motivational statement group had lower anxiety or the neutral statement group had higher anxiety.

Acceptable explanations include:

- *Dr. Dawson's hypothesis is supported because the motivational group had lower anxiety.*
- *Dr. Dawson's hypothesis is supported because the neutral statement group had higher anxiety.*

Unacceptable explanations include:

- *The results do not support Dr. Dawson's hypothesis.*
- *Dr. Dawson's hypothesis is supported because the motivational group had higher anxiety.*
- *Dr. Dawson's hypothesis is supported because the motivational group had low anxiety.*

Part B The test Dr. Dawson gave was a vocabulary test. Explain how the following terms might relate to the students who performed poorly on the test in this study.

External locus of control**1 point**

Response must indicate that students may perform poorly because they believe that factors outside of themselves (e.g., fate, luck, destiny, circumstances, other people) are responsible for their performance.

Acceptable explanations include:

- *Students who believe that fate determines their scores on the test won't perform as well.*
- *Students who believe that the unfairness of their teacher determines their score won't pass the test.*

Unacceptable explanations include:

Responses that do not include a cognitive component (e.g., perception, belief, thought) do not score.

- *Students did badly because the questions were too hard.*

Responses that refer to internal locus of control do not score.

- *Students believe they can control how they do on the test.*

Responses that refer to lack of control without mention of an outside factor do not score.

- *The students may think there is nothing they can do, so they perform worse on the test.*
- *The students did poorly on the quiz because they believed they lacked the ability to do well.*

Stage one of Selye's general adaptation syndrome**1 point**

Response must indicate that the students' sympathetic nervous system or some specific aspect of their sympathetic nervous system is activated which interferes with taking the test.

OR

Response indicates that the students' fight-or-flight mechanism is activated, which interferes with them taking the test.

NOTE: Students are not required to identify the name of the stage in order to earn the point.

Acceptable explanations include:

- *Students' fight or flight response might engage if they perceive the test as being a threat, so they might score lower than if they weren't stressed.*
- *Students' heart rates increased, and they performed poorly.*

Unacceptable explanations include:

Responses that do not indicate poor performance on the test do not score.

Responses that refer to being "alarmed," "stressed," or "aroused" but do not indicate a physiological element do not score.

- *The student was too alarmed or too aroused to perform well on the test.*
- *Students with anxiety might get sick because they've resisted stress so much.*

Crystallized intelligence**1 point**

Response must indicate that a lack of crystallized intelligence (e.g., accumulated knowledge, facts, general information, or vocabulary) could have hindered student performance on the test.

Acceptable explanations include:

- *Students who study the wrong vocabulary perform poorly.*
- *Students who do not have prior knowledge do poorly on the test.*

Unacceptable explanations include:

Responses that refer to general intelligence or fluid intelligence do not score.

- *Students may not be able to come up with abstract answers quickly, so they score low on the test.*

Responses that refer to memories unrelated to knowledge on the test do not score.

- *The memory of a past bad experience on a test makes them perform poorly on the vocabulary test.*

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Part A Jordan recently moved to a new school for her senior year of high school, and she has been adjusting to her new environment.

Explain how each of the following relates to Jordan's adjustment to her new school.

Spotlight effect**1 point**

Response must indicate that Jordan overestimates how much the people at her new school are paying attention to/judging her.

Acceptable explanations include:

- *Jordan feels so awkward her first few days because she thinks everyone is staring at her.*
- *Jordan believes that other students are noticing her, even when they are not.*

Unacceptable explanations include:

- *Jordan enjoys being in the spotlight and getting everyone's attention.*
- *Jordan worries that people are staring at her.*

Cognitive map**1 point**

Response must indicate that Jordan forms a mental representation of the school layout, which allows her to navigate.

OR

Response must indicate that Jordan does not form a mental representation of the school layout, which hinders her navigation.

Acceptable explanations include:

- *After a few weeks at the school, Jordan has developed a pretty good mental representation of the school's layout, so she can easily find everything now.*
- *Because Jordan never developed a mental representation of the layout of her new school, she struggles to find the gymnasium.*

Unacceptable explanations include:

- *Jordan memorized the map of her school to get around.*

Jordan's low level of the Big Five trait of extraversion**1 point**

Response must indicate that Jordan's low level of extraversion (e.g., lack of sociability, lack of outgoingness, not getting energy from large crowds, etc.) will make her less likely to interact with others at school.

Acceptable explanations include:

- *Because Jordan is not that outgoing, she finds it hard to make friends at her school.*
- *Because Jordan is not comfortable interacting with others, she won't ask questions of the teacher.*

Unacceptable explanations include:

- *Jordan is outgoing so she makes friends easily.*

Part B Jordan tries out for and makes the debate team. Jordan has made friends with other members of the team, and she really enjoys sitting with them at lunch every day. The coach is impressed with Jordan's debate skills, so he makes her the captain of the team. When Jordan starts to help the coach plan for the next big debate, her friends stop sitting with her at lunch. She then stops helping the coach plan for the next debate but ends up winning it.

Explain how each of the following concepts relates to the scenario.

Negative punishment**1 point**

Response must indicate that because Jordan's friends stop sitting with her at lunch, she stops helping the coach plan for the next debate.

Acceptable explanations include:

- *Because Jordan's friends stop sitting with her at lunch, Jordan stops helping the coach plan the debate.*
- *Jordan stops planning with the coach because her friends stop sitting with her at lunch.*

Unacceptable explanations include:

- *Jordan changes her behavior because bad things happen to her.*
- *Jordan stops helping the coach to get her friends to sit with her at lunch.*

Formal operational stage of cognitive development**1 point**

Response must indicate that Jordan is in the stage of development where she can think abstractly and hypothetically (e.g., critical thinking, reasoning, etc.).

Acceptable explanations include:

- *Jordan being good at debate shows that she can think abstractly and hypothetically, which is formal operational thinking.*

Unacceptable explanations include:

- *Jordan can think well now that she has grown older.*

Responses that include sensorimotor, preoperational, and concrete operational thinking.

- *Jordan can think well about object permanence.*

Actor-observer bias concerning Jordan's debate performance**1 point**

Response must indicate that Jordan attributes her own behavior to situational factors

AND

Response must indicate that others in the scenario attribute that same behavior to dispositional factors.

Acceptable explanations include:

- *Jordan believes she won the debate because she had the time to prepare, but Jordan's teammates think she won because she is smart.*

Unacceptable explanations include:

- *When Jordan is debating, the other debaters' think she acts fake.*
- *Jordan believes she is good at debate because she is intelligent.*

Jordan's high level of self-efficacy**1 point**

Response must indicate that Jordan believes she has the capability to accomplish a specific task related to the scenario.

Acceptable explanations include:

- *Jordan believes that she can win her debate.*
- *Jordan is sure she can do what it takes to make friends.*

Unacceptable explanations include:

Response refers to self-confidence or self-esteem without tying it to Jordan's belief about her ability to perform some specific tasks.

- *Jordan's self-efficacy causes her to stop planning with the coach.*
- *Jordan has high self-efficacy, so she believes in herself.*
- *Jordan thinks she is smart.*

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6. Within a bulleted question part, if the response addresses details from a scenario other than the one in the prompt, the point is not earned.

Part A Mobile Gamer Central (MGC) is preparing to launch a new game app. The advertisements for this new game are brightly colored, have lively music, and feature celebrities playing the game. To generate interest in the game, MGC pays to have these advertisements pop up multiple times while people are using other apps on their phone. The marketing director is pleased with the advertising campaign and thinks the game is really fun to play.

Explain how each of the following concepts relates to the scenario.

Peripheral route to persuasion**1 point**

Response must indicate that the advertisements utilize factors other than the quality of the game (e.g., bright colors, lively music, or celebrities shown in the ads) to persuade consumers.

OR

Response must indicate that the person exposed to the advertisement is persuaded by factors other than quality of the game (e.g., bright colors, lively music, or celebrities shown in the ads).

Acceptable explanations include:

- *The people liked the game because of who the celebrities were who were playing it in the ads.*
- *Because they included lots of bright colors and music in their commercials, it is clear that MGC wanted to employ the peripheral route to persuasion in their advertising.*
- *MGC tried to get people to buy the game for reasons other than that the game is well-designed.*

Unacceptable explanations include:

- *The customers like the game because it is easy to play.*

False consensus effect**1 point**

Response must indicate that, because an individual related to the scenario really likes the game/advertising, they overestimate the extent to which other people will like the game/advertising.

Acceptable explanations include:

- *The marketing director thinks everybody will like the game as much as he does.*
- *The marketing director thinks more people will buy the game than actually do because he enjoys it so much.*
- *A consumer really likes the pop-up ads and believes that most other people will like them as well.*

Unacceptable explanations include:

- *The marketing director's opinion is so strong that the other people on the team keep their opinions to themselves.*
- *People see advertisements with celebrities enjoying the game and assume everyone enjoys the game.*

Mere-exposure effect**1 point**

Response must indicate that repeated exposure(s) to the game/advertisement will increase the liking/enjoyment of the game/advertisement.

Acceptable explanations include:

- *The more often people see the ads pop up on their phone, the more they will like the game. People liked the advertisement the second time they saw it more than the first time.*
- *The more times people play the game, the more likely they are to buy it.*

Unacceptable explanations include:

- *By playing the game, the people enjoy it and want to download it.*

Part B After a few weeks with moderate success, MGC's marketing director decides to test the most effective ways to increase sales of the game. Marketing researchers recruit 100 people to play the new game. They randomly assign half of the people to observe someone demonstrating how the game is played and assign the other half of the people to play the video game themselves. Participants rate how likely they are to buy the game on a scale of 1 (not likely) through 10 (very likely). Results are presented in the table.

Participants' Rating	Observed Game Demonstration (<i>n</i> = 50)	Personally Played Game (<i>n</i> = 50)	<i>p</i> value
Mean	6.31	2.04	<0.001
Standard Deviation	1.25	0.80	

Identify the operational definition of the dependent variable in the study.**1 point**

Response must indicate that the operational definition of the dependent variable is the rating/score/number on the scale used in the study.

Acceptable explanations include:

- *The rating of the game on a scale of 1–10 is the dependent variable.*
- *The score of the survey indicating how likely the participant is to buy the game is the operational definition of the dependent variable.*

Unacceptable explanations include:

- *The operational definition of the dependent variable is which group the people were in.*
- *The operational definition of the DV is whether people will buy the game.*
- *The operational definition is how much people like the game.*

Explain what the difference between the standard deviations in the study indicates.

1 point

Response must indicate that the “personally played game” group ratings are more similar/less varied.

OR

Response must indicate that the “observed game demonstration” group ratings differ more/varied more.

Acceptable explanations include:

- *The personally played game group had responses that were more alike because their standard deviation is closer to zero.*
- *The ratings in the group who observed the game were more spread out than the group who played the game.*

Unacceptable explanations include:

- *The observed game group had higher scores than the personally played game group.*

Explain why random assignment is necessary for determining cause and effect in the study.

1 point

Responses must indicate that random assignment is necessary because it would help eliminate or reduce the impact of confounding variables related to individual differences.

Acceptable explanations include:

- *The researchers used random assignment to make sure individual differences are controlled for.*
- *The researchers used random assignment to make sure differences between participants are more likely to be spread out evenly between the two groups.*
- *The researchers used random assignment to make sure gender wasn't the reason why people wanted to buy the app.*

Unacceptable explanations include:

- *They must get a random group of people to participate in order to establish cause and effect.*
- *Random assignment is necessary for it to be an experiment.*
- *Random assignment will allow the MGC researchers to eliminate bias and confounding variables.*

Explain what the p value allows MGC to conclude about the study.

1 point

Response must indicate that the p value allows MGC to conclude that the IV (observing vs. playing the game) caused a change in the DV (ratings).

OR

Response must indicate that the p value allows MGC to conclude that the results of the study or difference between the groups' ratings were significant.

OR

Response must indicate that the p value allows MGC to conclude that the difference between the groups' ratings was not (or not likely) due to chance.

Acceptable explanations include:

- *The p value allows them to conclude that the people who observed the game demo were significantly more likely to say they would buy the app.*
- *The p value says that the groups' ratings were different enough to be statistically significant.*
- *The p value says that the difference in the group's ratings about the game is not likely due to chance.*
- *The p value allows MGC researchers to reject the null hypothesis.*

Unacceptable explanations include:

- *The p value shows that the results are accurate.*
- *The p value shows that the people who played the game found the experience to be significant.*

Total for question 2 7 points