AP® PSYCHOLOGY
2014 SCORING GUIDELINES

Question 1

General Considerations

1. Answers must be presented in sentences, and sentences must be cogent enough for the student's meaning to come through. Spelling and grammatical mistakes do not reduce a student's score, but spelling must be close enough so that the reader is convinced of the word.
2. Do not score students' notes made on the question section of the booklet. Score only what has been written in the blanks provided in the booklet.
3. Within a point, a student will not be penalized for misinformation unless it *directly contradicts* correct information that would otherwise have scored a point.
4. A student can score points only if the student clearly conveys what part of the question is being answered. For example, it is possible to infer the part of the question being answered if it is consistent with the order of the question.
5. Rubric examples provided for each point are not to be considered exhaustive.

Point 1: Describe the levels of the independent variable.

A. To earn this point, the student must identify the high power **AND** the low power condition, **OR**
B. The student must describe the levels as recalling a time when the participant had power over someone else **AND** a time when another person had power over them.

Point 2: Describe how the researchers measured the dependent variable.

A. To earn this point, the student must state that the dependent variable is measured by the height of the participant's visual representation (e.g., the electronic graphical image, an avatar, image, or figure).
B. The student must be clearly referring to a visual image, not self-concept.

Examples:

Do not score "bigger" or "size" as it may not refer to height.

Do not score "perception of height" because there must be a reference to the participant's visual representation.

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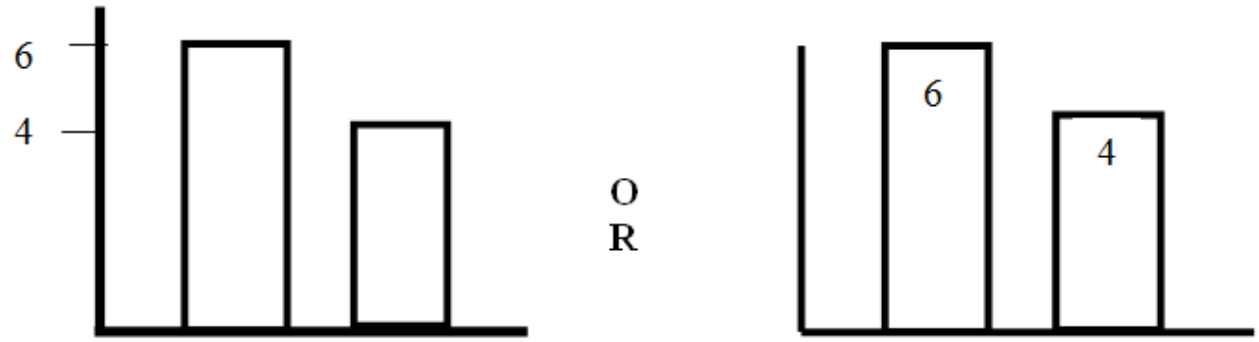
Question 1 (continued)

Point 3: Create a bar graph illustrating the results of the study.

A. To earn this point the student must correctly plot the means, 6 and 4.

Examples:



Do not score if the student draws more than 2 bars, unless there are two additional bars that are explicitly graphing the standard deviation (1.5, 1).

Do not score if the student labels low-power condition as 6 and high-power condition as 4.

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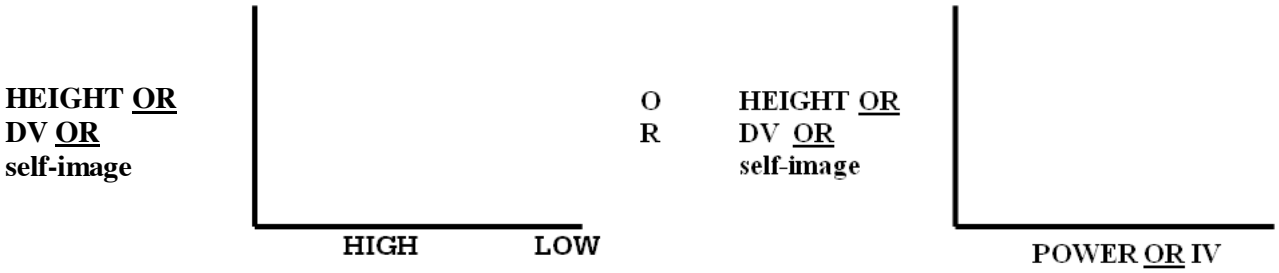
Question 1 (continued)

Point 4: Correctly label each axis.

A. To earn this point, the student must label the X axis as the IV **OR** power (high, low) and the Y axis as the DV **OR** height.

Examples:



Do not score "size" on the Y axis because size may not be referring to height.

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Question 1 (continued)

Point 5: Explain why the researchers can conclude that there is a cause-and-effect relationship between the independent and dependent variables.

A. The student can earn this point by indicating that participants were randomly assigned **OR**
B. The student identities this study as an experiment **OR**
C. The student states specifically that the researcher manipulated the independent variable (power condition) in the study.

Note:
Any description of what the researcher did without explicitly using the term "manipulation" will not score.

Examples:
Do not score if the student only uses the results of the study as the demonstration of cause and effect.

Do not score "random selection."

Point 6: Explain what statistical significance means in the context of the study.

A. To earn this point the student must explain that if the results of this study are statistically significant, then the results are *not* likely to have occurred by chance (are not random), **OR**
B. That there is a high probability that the independent variable caused changes in the dependent variable.

Examples:
Score "The results are not due to chance."

Do not score "it is due to the IV" because the student is not referring to chance.

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Question 1 (continued)

Point 7: Explain why debriefing would be necessary in the study.

A. To earn this point the student must explain that debriefing is necessary because deception was used in the study **OR**
B. The student must describe the deception as "participants believing they were participating in a business simulation" or "participants were not told that researchers were actually measuring self-image" **OR**
C. The student must explain that debriefing minimizes any negative impact on the participants of the power conditions.

Examples:

Do not score synonyms for deception (e.g., "lied," "misled") without a description of the deception (i.e., "believing they were participating in a business simulation" or "not told that researchers were actually measuring self-image").

Do not score "participants were not told the true purpose of the study" without a description of the deception (i.e., "believing they were participating in a business simulation" or "not told that researchers were actually measuring self-image").

Do not score a general explanation that "experimenters must debrief after a study" or that "ethical guidelines require debriefing" without referring to deception or the negative impact of being assigned to one of the power conditions.

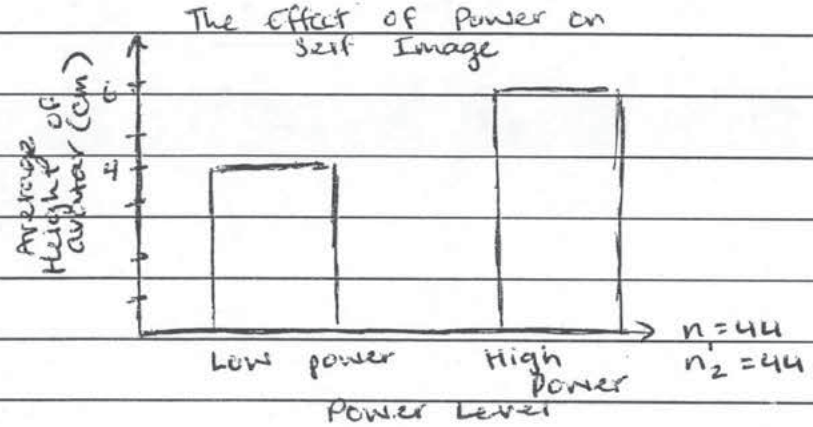
Do not score answers that only provide justifications for using deception.

ANSWER PAGE FOR QUESTION 1

1. The levels of the independent variable were (a) a high power condition and (b) a low power condition. The subjects were asked to recall either a time when they had influence over others, or others had an influence over them.

2. The researchers measured the dependent variable (self-image) by asking subjects to adjust the height of an avatar representing themselves

3.



4. The researchers can conclude that there is a cause-and-effect relationship ~~be~~ between the two variables because they had conducted an experiment, rather than an observational study or other similar method in which a variable is not directly manipulated by the researcher. Also, the mean height of the high power group was significantly larger than that of the low power group, which indicates a relationship between power and self-image

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1A
2 of 3

Question 1 is reprinted for your convenience.

1. Adapted from M. M. Duguid and J. A. Goncalo, *Living Large: The Powerful Overestimate Their Own Height.*

In a study of power and self-image, participants were not told the true purpose of the study; instead, they believed they were participating in a business simulation. Researchers randomly assigned participants to a high-power ($n = 44$) or low-power ($n = 44$) condition. In the high-power condition, participants recalled a time when they had power over others, and in the low-power condition, they recalled a time when others had power over them. Participants were asked to adjust the height (in centimeters) of an electronic graphical image (an avatar) of themselves to reflect their personal appearance. Results indicated a statistically significant difference in participants' perceptions of their own height across the two conditions. Participants in the high-power condition created taller self-images (mean = 6.0, standard deviation = 1.5) than participants in the low-power condition (mean = 4.0, standard deviation = 1.0).

- Describe the levels of the independent variable. ✓
- Describe how the researchers measured the dependent variable. ✓
- Create a bar graph illustrating the results of the study. Correctly label each axis. ✓
- Explain why the researchers can conclude that there is a cause-and-effect relationship between the independent and dependent variables. ✓
- Explain what statistical significance means in the context of the study. ✓
- Explain why debriefing would be necessary in the study.

5. In this case, the ~~term~~ "statistical significance" means that the results of the experiment (low power group had a lower mean avatar height) were probably not due to luck/chance. In other words, the experiment was ~~a~~ most likely not a fluke.

6. Debriefing is necessary in the study to ~~prevent~~ preserve ~~the~~ ethical guidelines. In ~~all~~ most experiments, the subjects must be fully aware ~~and~~ of the experiment's purpose, and consent to being experimented on for that purpose. In cases where it is absolutely required for the subject to be oblivious, such as this one they must be brought up to speed after the ~~ex~~ results are

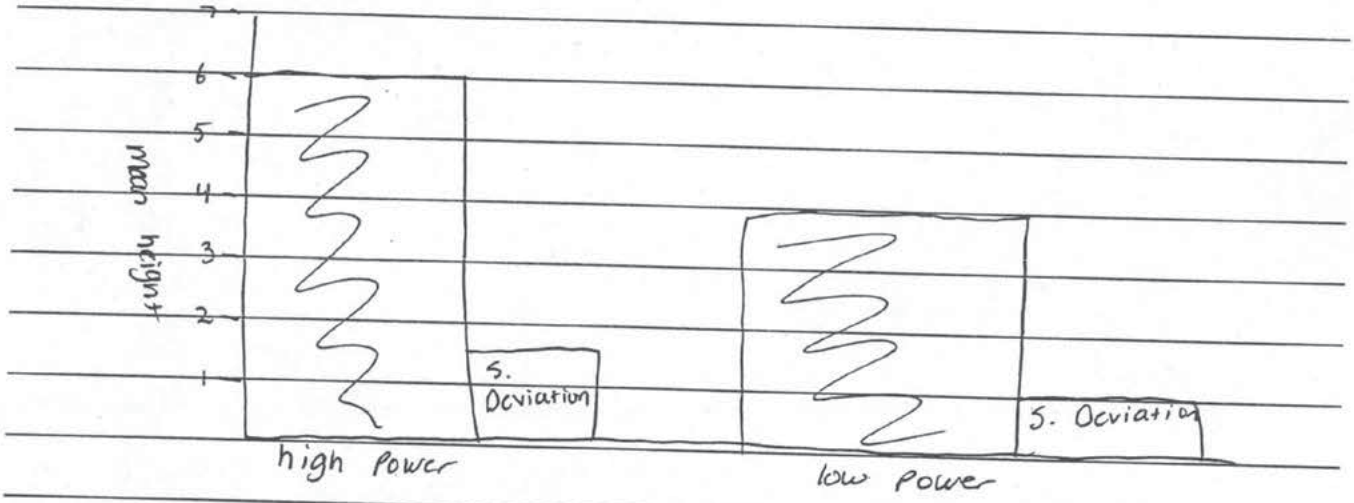
ADDITIONAL ANSWER PAGE FOR QUESTION 1

obtained. Otherwise, the subjects will continue to believe that they had only been participating in a business simulation; and thus be misinformed.

1B
1 of 2

• The levels of the Independent variable consits of 2 different levels, higher power and lower power. Both powers put you in seperate places when it comes to taking/giving orders.

• Researchers measured the dependent variable based off the answers the participants gave. The dependent variase was how tall they each made their simulated character to be. The more important their position was, the taller they made themselves and vise versa. They got his info based off the mean and standard deviation of the data set.



They can conclude their is a cause and effect relationship between the two b/c clearly people who have a higher position (Cause) always see themselves as taller then people with low power (Effect). The only reason ~~higher~~ people make themselves is b/c of their power position, cause and effect.

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1B
2 of 2

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   - Describe the levels of the independent variable.
   - Describe how the researchers measured the dependent variable.
   - Create a bar graph illustrating the results of the study. Correctly label each axis.
   - Explain why the researchers can conclude that there is a cause-and-effect relationship between the independent and dependent variables.
   - Explain what statistical significance means in the context of the study.
   - Explain why debriefing would be necessary in the study.

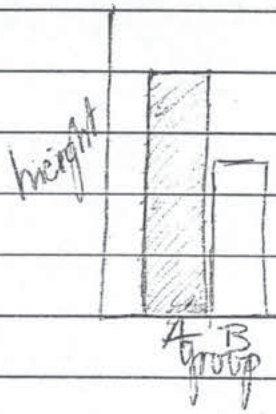
• The statistics of this study are significant because it clearly proves that people who are higher ranked in society view themselves as better people and w/ a higher physical presense then other people do. They feel as if they are more important people then people w/ low power.

• Debriefing would be necessary in this experiment b/c at the beginning the participants were not informed of the purpose of the experiment. Ever since Milgram's experiment, participants had to be made aware of the real reason why they were in the experiment.

ANSWER PAGE FOR QUESTION 1

The levels of independent are the ~~the~~ power conditions in which the groups are placed in. This is like the Zimbardo experiment. The higher powers are acting like authority figures and the lower power groups are the prisoners.

The researchers measured the dependent variable by questioning the participants ~~and~~ evaluating how their attitudes and personality changed base on their power ~~start~~ status and how that affected them.



The researchers can conclude that there is a cause-and-effect relationship between the ~~ra~~dependent and dependent variables because the powers that they had determined how the view themselves

Statistical significance means that the ~~stat~~ study ~~was~~ had a significant impact to the experiment. The goals are true and valid.

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   - Describe the levels of the independent variable.
   - Describe how the researchers measured the dependent variable.
   - Create a bar graph illustrating the results of the study. Correctly label each axis.
   - Explain why the researchers can conclude that there is a cause-and-effect relationship between the independent and dependent variables.
   - Explain what statistical significance means in the context of the study.
   - Explain why debriefing would be necessary in the study.

Debriefing would be necessary in the study because it makes the participant have insight of what is going on in the study so that the can legally agree to what is going on. It tells the participant what the study is about and it makes it moral and ethically okay to do the study.

AP® PSYCHOLOGY
2014 SCORING COMMENTARY

Question 1

Overview

This question assessed students' ability to analyze characteristics of research design and their ability to create and correctly label a visual representation of research results.

Students were required to describe the levels of the independent variable as described in the question. The question also assessed the students understanding of how researchers measure a dependent variable. It was also necessary for students to create a bar graph, including the labeling of each axis, illustrating the results of the study. Students had to explain why researchers can draw cause and effect conclusions between the independent and dependent variables. The question also assessed how well students comprehend statistical significance within the context of a specific study and why debriefing is necessary in research studies that include deception.

Sample: 1A
Score: 7

This essay scored point 1 because the student refers to the high power and lower power conditions. Point 2 scored when the essay explained that the dependent variable was measured by adjusting "the height of an avatar." Point 3 scored because the essay provides two bars indicating that one represents a mean of 4 and the other a mean of 6. Point 4 scored because the X axis is correctly labeled "Low power" and "High power," as well as the Y axis correctly labeled "Average height of avatar (cm)." Point 5 scored because the essay explains that "because they had conducted an experiment." Point 6 scored because the essay explains that the results "were probably not due to luck/chance." Point 7 scored because the essay explains that it was necessary to debrief the participants, "Otherwise, the subjects will continue to believe that they had only been participating in a business simulation."

Sample: 1B
Score: 4

This essay scored point 1 because the student correctly identifies both the high and low power conditions. Point 2 scored because the essay states that the dependent variable is measured by height ("how tall") of the participant's visual representation ("simulated character"). Point 3 scored because the essay provides two bars indicating that one represents a mean of 6 and the other a mean of 4. The essay also provides two bars representing the standard deviation. The essay still scored this point because these bars were clearly labeled as the standard deviation. Point 4 scored because the X axis is correctly labeled as "high power" and "low power" as well as the Y axis correctly labeled "mean height." Point 5 did not score because the essay only uses the results of the study as the demonstration of cause and effect. Point 6 did not score because the essay does not explain that the results of this study, if statistically significant, are not due to chance. Point 7 did not score because, while the essay states that "participants were not informed of the purpose of the experiment," the response does not describe the deception.

Sample: 1C
Score: 1

This essay scored point 1 because the student distinguishes between the "higher powers" and the "lower power group." Point 2 did not score because the essay does not identify that the dependent variable is measured by the height of the participant's visual representation. Point 3 did not score because the essay did not correctly plot the means. Point 4 did not score because the X axis is incorrectly labeled. Point 5 was not scored because the essay focuses on describing the results of the study. Point 6 did not score because

Question 1 (continued)

the essay does not explain that the results of the study are not likely to have occurred by chance. Point 7 did not score because the essay does not describe the deception.