Words to use for Questions 1-8

Hypothesis
Research Question
Pseudoscience
Quantitative
Qualitative
Technology
Inference
Conclusion

1) A _____ observation is an observation that is a measurement.

2) _____ is fake science with no validity.

3) The _____ is what you want to answer by experimenting.

4) A testable educated guess is called a _____.

5) The _____, a judgment based on the results of an experiment, is written after the experiment is complete and the data has been analyzed.

6) A _____ observation is an observation that describes.

7) _____ is the application of the findings of science.

8) After making an observation, you may write an _____ that explains your observation.

9) The shelf is 4.50 feet long. This is a qualitative observation.
   a) True
   b) False

10) There are four students in the room. This is a quantitative observation.
   a) True
   b) False

11) The paper is long. This is a qualitative observation.
   a) True
   b) False

12) The dog is a great dane. This is a quantitative observation.
   a) True
   b) False

13) The block is yellow. This is a qualitative observation.
   a) True
   b) False

14) Which of the following is used as a tool of science?
   a) Language Arts
   b) Foreign Language
   c) Mathematics
   d) Social Studies

15) What did Galileo do that the men before him did not do?
   a) Have other scientists vote
   b) Experiment
   c) Argue
   d) Conduct a survey

16) Which scientist stated "No number of experiments can prove me right; a single experiment can prove me wrong."
   a) Aristotle
   b) Copernicus
   c) Galileo
   d) Einstein

17) A scientific hypothesis must
   a) Be phrased "It is hypothesized that . . ."
   b) Be testable
   c) Be correct
   d) Be phrased as an "If...Then" statement
   e) Both a and b
   f) Both b and d

18) Which of the following is true of technology?
   a) Technology is a way to apply scientific findings.
   b) Technology is the same thing as science.
   c) Science has no benefit to science because it often is unreliable.

19) _____ Facts and well tested hypotheses that explain phenomena
20) _____ A phenomena about which competent observers can agree
21) _____ Organized common sense and findings by humans about nature
22) _____ These are the things that must be kept the same in an experiment
23) _____ A way to organize, investigate, and apply knowledge.
24) _____ The 2 names for the thing you measure as a result of the change in an experiment.
25) _____ Hypotheses that have been tested and not found to be false; principle
26) _____ The 2 names for the thing you are changing in an experiment.

a) theory
b) scientific fact
c) science
d) controlled variables
e) scientific method
f) responding or dependent variable
g) law
h) manipulated or independent variable

A study is done to determine if the amount of water a plant receives affects the height of the plant.

Determine which part of the experimental design each of the following represents.

Answers may be used more than once.

Answer Choices:
Manipulated Variable
Responding Variable
Controlled Variable
Research Question
Operational Definition of the Independent Variable
Operational Definition of the Dependent Variable

27) The soil the plants are grown in is a _____.

28) The amount of water will be measured in milliliters using a graduated cylinder is the _____ _____.

29) The amount of time between height measurements is a _____.

30) The height of the plant is the _____.

31) The type of plant used is a _____.

32) The height of the plant will be measured in millimeters using a ruler is the _____.

33) The amount of water the plant receives is the _____.

34) The amount of sunlight the plant receives is a _____.

35) How does the amount of water a plant receives affect the height of the plant is the _____ ____.

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Conclusion

1) A [***quantitative*** observation is an observation that is a measurement.

2) [***pseudoscience*** is fake science with no validity.

3) The [***research question*** is what you want to answer by experimenting.

4) A testable educated guess is called a [***hypothesis*** .

5) The [***conclusion*** , a judgment based on the results of an experiment, is written after the experiment is complete and the data has been analyzed.

6) A [***qualitative*** observation is an observation that describes.

7) [***technology*** is the application of the findings of science.

8) After making an observation, you may write an [***inference*** that explains your observation.

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22) ***d*** These are the things that must be kept the same in an experiment

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24) ***f*** The 2 names for the thing you measure as a result of the change in an experiment.

25) ***g*** Hypotheses that have been tested and not found to be false; principle

26) ***h*** The 2 names for the thing you are changing in an experiment.

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Research Question
Operational Definition of the Independent Variable
Operational Definition of the Dependent Variable

27) The soil the plants are grown in is a [***controlled variable***.

28) The amount of water will be measured in milliliters using a graduated cylinder is the [***operational definition of the independent variable***.

29) The amount of time between height measurements is a [***controlled variable***.

30) The height of the plant is the [***responding variable***.

31) The type of plant used is a [***controlled variable***.

32) The height of the plant will be measured in millimeters using a ruler is the [***operational definition of the dependent variable***.

33) The amount of water the plant receives is the [***manipulated variable***.

34) The amount of sunlight the plant receives is a [***controlled variable***.

35) How does the amount of water a plant receives affect the height of the plant is the [***research question***.