Lab Manual for Human Anatomy and Physiology, 4e **(Martin)**
Chapter 1 Scientific Method and Measurements

1) The first step of the scientific method is making observations.

Answer: TRUE
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
Activity Type: New
Accessibility: Keyboard Navigation

2) Which step of the scientific method involves forming a tentative explanation of information?
A) Hypothesis
B) Observations
C) Conclusion
D) Experiment
E) Data analysis

Answer: A
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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3) In the metric system, 1 cm is equal to _____ mm.
A) 100
B) 1,000
C) 0.1
D) 10
E) 0.01

Answer: D
Topic: Scientific method
Bloom's: 3. Apply
Learning Outcome: 01.01 Convert English measurements to the metric system, and vice versa.
Activity Type: New
Accessibility: Keyboard Navigation

4) The final step in the scientific method is data analysis.

Answer: FALSE
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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5) The difference between an independent variable and a dependent variable is that the dependent variable
A) can be changed.
B) is derived from the experimental results.
C) is determined before the experiment is conducted.
D) is equivalent to the hypothesis.
E) is equivalent to the observations.

Answer: B
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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6) In the metric system, a liter (L) is a unit that measures
A) mass.
B) time.
C) length.
D) temperature.
E) volume.

Answer: E
Topic: Scientific method
Bloom's: 1. Remember
Learning Outcome: 01.01 Convert English measurements to the metric system, and vice versa.
Activity Type: New
Accessibility: Keyboard Navigation

7) In the metric system, a gram (g) is a unit of mass.

Answer: TRUE
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.01 Convert English measurements to the metric system, and vice versa.
Activity Type: New
Accessibility: Keyboard Navigation

8) Which of the following is NOT a component of the scientific method?
A) Conclusions
B) Experiment
C) Theory
D) Hypothesis
E) Observations

Answer: C
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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9) According to the hypothesis you tested in this experiment, the ratio of a person's upper limb length to body height is approximately 50%.

Answer: FALSE
Topic: Scope of anatomy and physiology; Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.02 Calculate expected upper limb length and actual percentage of height from recorded upper limb lengths and heights.
Activity Type: New
Accessibility: Keyboard Navigation

10) Which component of the scientific method involves organizing results as tables, graphs, or drawings?
A) Conclusions
B) Observations
C) Data analysis
D) Experiment
E) Theory

Answer: C
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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11) When drawing a graph to display experimental data, the independent variable is plotted along the x-axis.

Answer: TRUE
Topic: Scientific method
Bloom's: 3. Apply
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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12) Knowing that there are 2.54 cm per inch, a person that is 5'5" in height would be _____ cm tall.
A) 16.51
B) 165.1
C) 25.4
D) 25.6
E) 255.9

Answer: B
Topic: Scientific method
Bloom's: 3. Apply
Learning Outcome: 01.01 Convert English measurements to the metric system, and vice versa.
Activity Type: New
Accessibility: Keyboard Navigation

13) An important feature of a hypothesis is that it has to be _____.
A) a known fact
B) true
C) a widely accepted theory
D) false
E) testable

Answer: E
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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14) When conducting an experiment to test a hypothesis, only one changeable factor is studied; this is called a variable.

Answer: TRUE
Topic: Scientific method
Bloom's: 2. Understand
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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15) When plotting data on a graph, drawing the line of best fit involves placing all of the data points on the line.

Answer: FALSE
Topic: Scientific method
Bloom's: 3. Apply
Learning Outcome: 01.03 Apply the scientific method to test the validity of a hypothesis concerning the direct, linear relationship between human upper limb length and height.
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