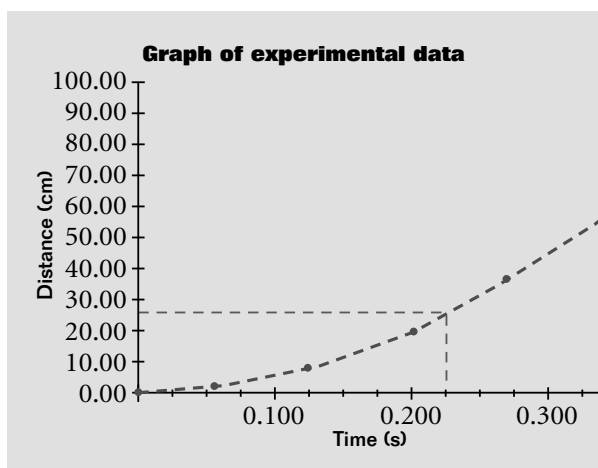


10. Which of the following statements is true of *any* valid physical equation?

F. Both sides have the same dimensions.
G. Both sides have the same variables.
H. There are variables but no numbers.
J. There are numbers but no variables.

The graph below shows the relationship between time and distance for a ball dropped vertically from rest. Use the graph to answer questions 11–12.



11. About how far has the ball fallen after 0.200 s?
- A. 5.00 cm
B. 10.00 cm
C. 20.00 cm
D. 30.00 cm
12. Which of the following statements best describes the relationship between the variables?
- F. For equal time intervals, the change in position is increasing.
G. For equal time intervals, the change in position is decreasing.
H. For equal time intervals, the change in position is constant.
J. There is no clear relationship between time and change in position.

SHORT RESPONSE

13. Determine the number of significant figures in each of the following measurements.
- A. 0.0057 kg
B. 5.70 g
C. 6070 m
D. 6.070×10^3 m
14. Calculate the following sum, and express the answer in meters. Follow the rules for significant figures.
- $(25.873 \text{ km}) + (1024 \text{ m}) + (3.0 \text{ cm})$
15. Demonstrate how dimensional analysis can be used to find the dimensions that result from dividing distance by speed.

EXTENDED RESPONSE

16. You have decided to test the effects of four different garden fertilizers by applying them to four separate rows of vegetables. What factors should you control? How could you measure the results?
17. In a paragraph, describe how you could estimate the number of blades of grass on a football field.

Test TIP

If more than one answer to a multiple-choice question seems to be correct, pick the answer that is *most* correct or that most directly answers the question.