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## **Bell Work - P3 and P4 - Wednesday, October 10/12**

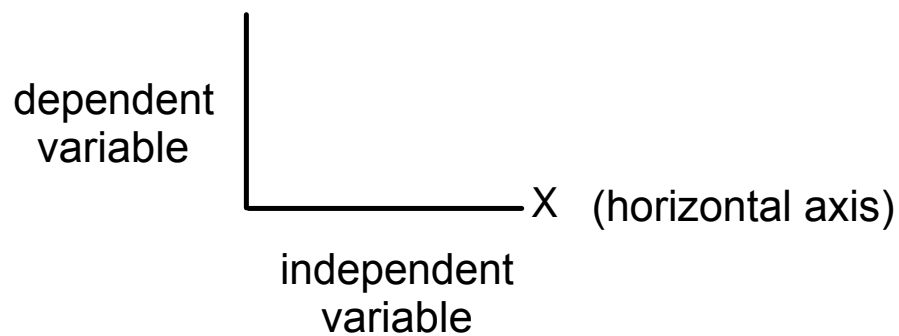
When solving a problem involving distance, time and average speed, what must be included in your solution to obtain full value?

## Graphs

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- are used to communicate quantitative information visually.
- help us understand the relationship between two variables.

(vertical axis) Y



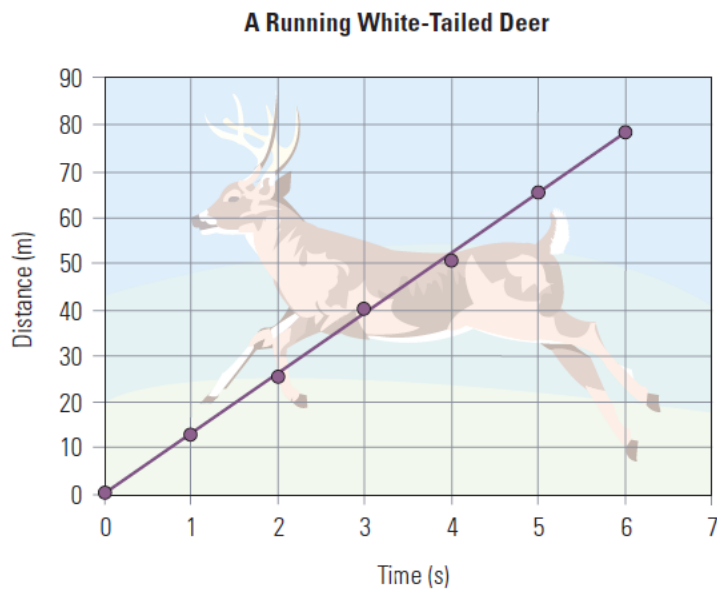
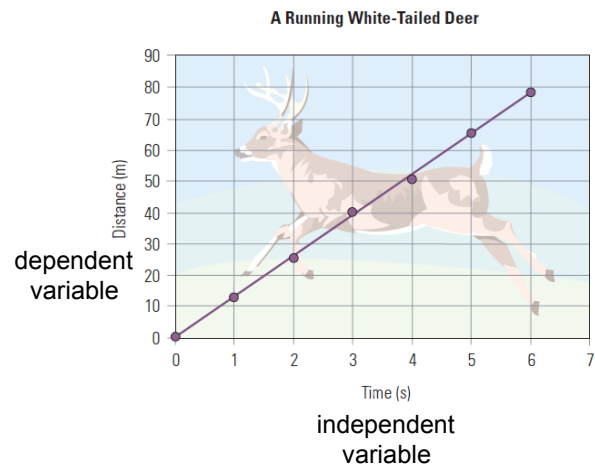
# Distance-Time Graphs

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**Table 1** A Running White-Tailed Deer

Time (s)	Distance (m)
0	0
1.0	13
2.0	25
3.0	40
4.0	51
5.0	66
6.0	78

(time, distance)



Straight Line -> There is a direct relationship between distance and time.

As  $t$  increases,  $d$  increases.

The relationship follows the general equation for a straight line.

$$\begin{array}{c}
 \text{dependent} \\ \text{variable} \\ \downarrow \\
 \mathbf{y} = \mathbf{m}\mathbf{x} + \mathbf{b} \\
 \begin{array}{cc}
 \downarrow & \downarrow \\
 \text{slope} & \text{y-intercept} \\
 \uparrow & \uparrow
 \end{array}
 \end{array}$$

To find slope, you need two points on the straight line.

point 1  $\rightarrow$   $(x_1, y_1)$

point 2  $\rightarrow$   $(x_2, y_2)$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\begin{array}{c}
 \text{dependent} \\ \text{variable} \\ \downarrow \\
 \mathbf{d} = \mathbf{v}\mathbf{t} + \mathbf{0} \\
 \begin{array}{cc}
 \downarrow & \downarrow \\
 \text{slope} & \text{y-intercept} \\
 \uparrow & \uparrow
 \end{array}
 \end{array}$$

point 1  $\rightarrow$   $(t_1, d_1)$

point 2  $\rightarrow$   $(t_2, d_2)$

$$v = \frac{d_2 - d_1}{t_2 - t_1}$$