Example 1

...continued

How many hours did the whole trip take?

The trip from Edmonton to Jasper took $4\frac{3}{4}$ hours.

What time did the truck arrive in Jasper?

The truck arrived in Jasper at 22:15 hours or 10:15 pm.

Since most vehicles take less than a minute to accelerate or decelerate in speed, the increase and decrease in speed on the graph look like vertical lines with no slope when they actually do have a slight slope.

Graphing calculators and some spreadsheet software can also be used to graph a set of data. For specific instructions, consult your calculator's manual or enter "graphing data using [enter the name of your graphing calculator or program]" into a search engine. More specific instructions for TI-83™ and TI-84™ calculators are provided in the *Appendix*.

Check Up

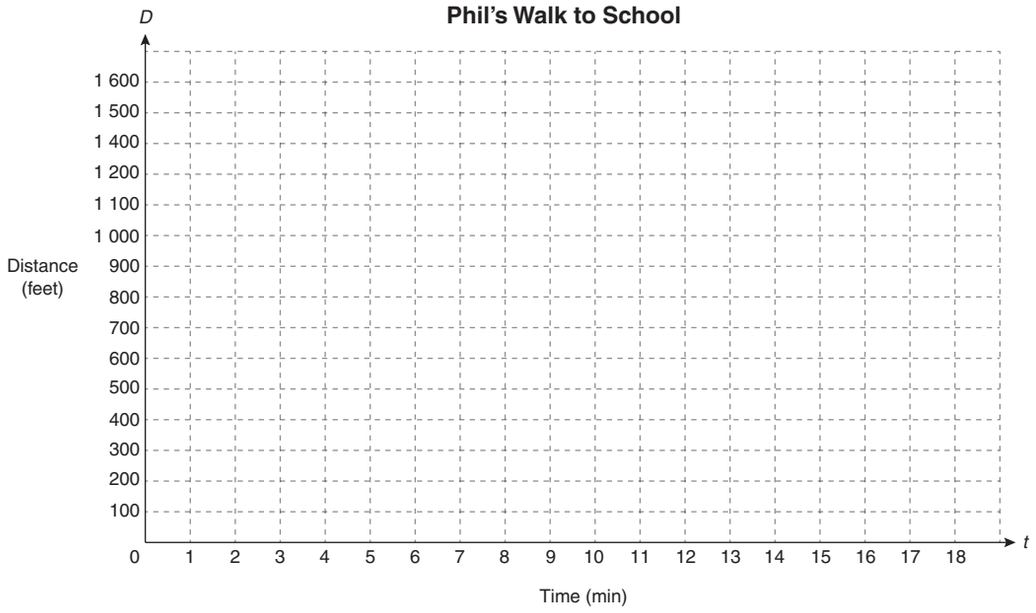
1. Usually Phil walks to school at a rate of 100 feet per minute.

   Complete the following table of values of the time in seconds and the distance in feet based on this rate.

Time (seconds)	Distance (feet)
30	
60	
90	
120	
150	

2. Sketch a graph of the following scenario.

   Phil's school is 1 500 feet from his house. Phil leaves home and walks about 300 feet for 3 minutes. He stops for 1 minute to talk with a neighbour out walking his dog. He continues to walk another 200 feet in 2 minutes. He stops at the corner store to grab a breakfast snack. This stop takes 2 minutes. Finally, Phil walks the remaining 1 500 feet to school in 10 minutes.



3. A grade 10 student was asked to take fifty basketball shots. He took ten shots from each of the following distances to the hoop: 1 metre, 2 metres, 3 metres, 4 metres, and 5 metres.

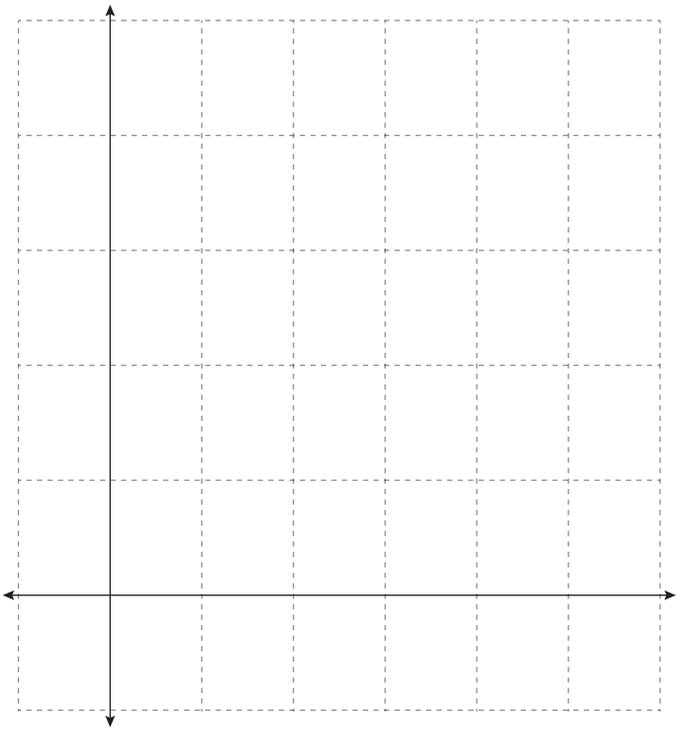
   The table shows the results.

Distance	Baskets made out of 10	Success rate
1 m	8	80%
2 m	7	70%
3 m	5	50%
4 m	6	60%
5 m	5	50%

   a. Name the horizontal and vertical axes.

   b. State the ordered pairs of this relation.

c. Sketch the graph. Be sure to include appropriate labels.



d. State a conclusion about the data presented in the graph.

☑ Compare your answers.

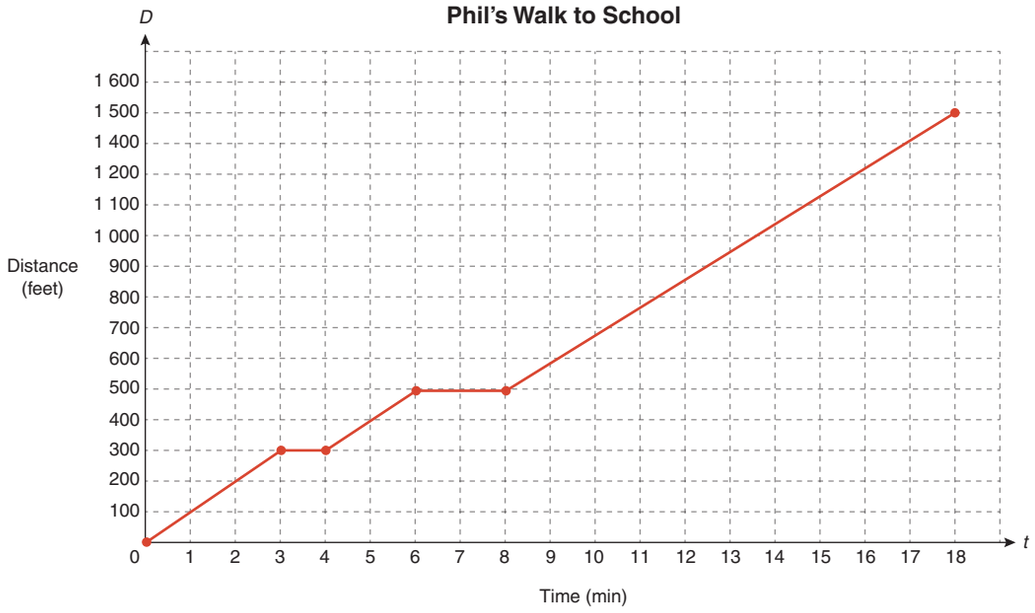
1. Usually Phil walks to school at a rate of 100 ft per minute.

   Complete the following table of values of the time in seconds and the distance in feet based on this rate.

Time (seconds)	Distance (feet)
30	50
60	100
90	150
120	200
150	250

2. Sketch a graph of the following scenario.

   Phil's school is 1 500 feet from his house. Phil leaves home and walks about 300 feet for 3 minutes. He stops for 1 minute to talk with a neighbour out walking his dog. He continues to walk another 200 feet in 2 minutes. He stops at the corner store to grab a breakfast snack. This stop takes 2 minutes. Finally, Phil walks the remainder of the 1 500 feet to school in 10 minutes.



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Distance	Baskets made out of 10	Success rate
1 m	8	80 %
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3 m	5	50 %
4 m	6	60 %
5 m	5	50 %

   a. Name the horizontal and vertical axes.

   Horizontal Axis: Distance, in metres

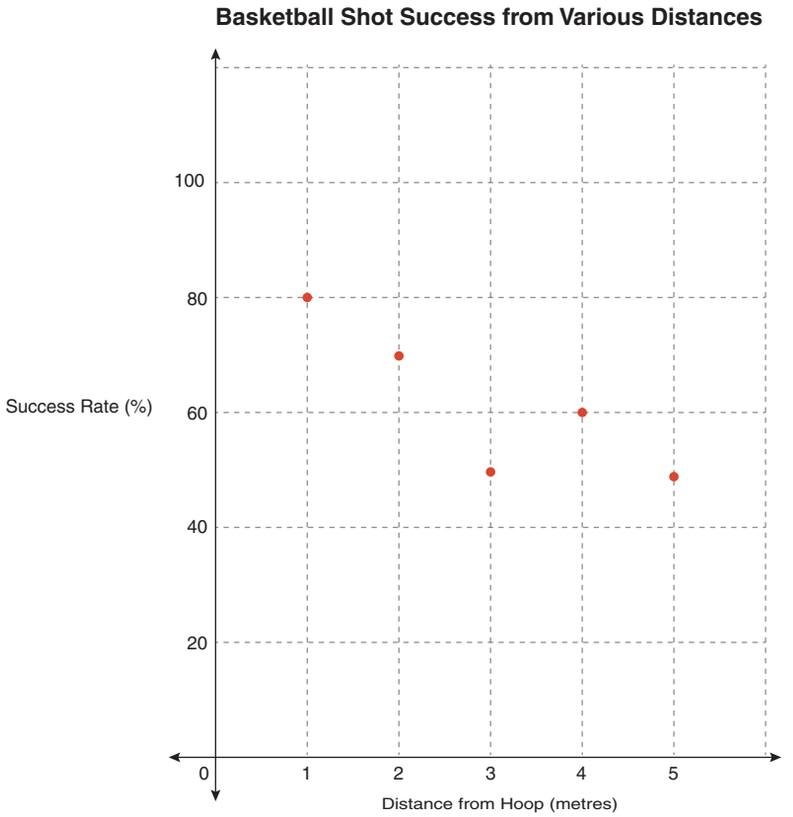
   Vertical Axis: Success rate as a percentage or Baskets made out of 10.

   b. State the ordered pairs of this relation.

   $\{(1,80),(2,70),(3,50),(4,60),(5,50)\}$
   or
   $\{(1,8),(2,7),(3,5),(4,6),(5,5)\}$

c. Draw the graph. Be sure to include appropriate labels.

Two graphs are possible, depending on the information chosen for the vertical axis. A graph showing the success rate is shown.



d. State a conclusion about the data presented in the graph.

In general, the student's success rate decreased as his distance from the basketball hoop increased.

Interpreting and drawing graphs are important skills that are applicable to math, science, and social studies. The information presented in graphs can visually summarize large amounts of data.

The next lesson will explore variable limitations. Domain and range define the values variables can take.

Multimedia

Additional video examples pertaining to this lesson are available.