

Example 6: Linear Application with Verbal Description Given

There is 8 cm of snow on the ground. It melting at a rate of 0.5 cm per hour. Complete the table shown below.

| | | | | | |
|---------------------|-----|-----|-----|-----|-----|
| Time (hours) | 0 | 1 | 2 | 3 | 4 |
| Amount of Snow (cm) | 8.0 | 7.5 | 7.0 | 6.5 | 6.0 |

- a) Graph the scatterplot of the data.

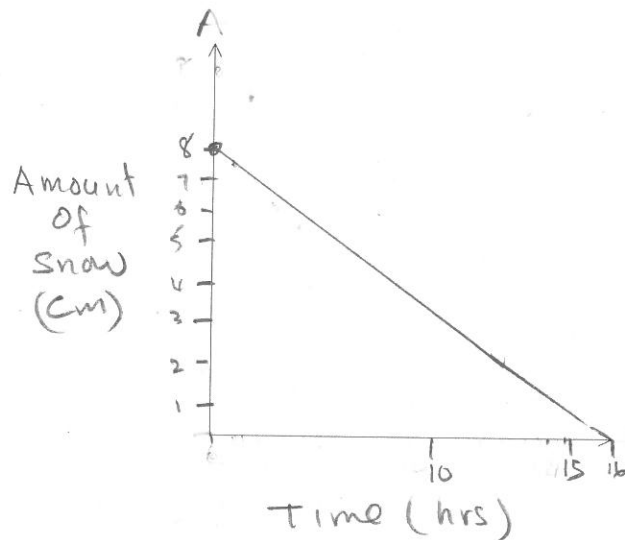
window

$$x - \min = 0$$

$$x - \max = 2.0$$

$$y - \min = 0$$

$$y - \max = 10$$



- b) Is the relation linear? Explain. If so, sketch the linear regression equation on the grid above, and write the regression equation below. *yes. Because the snow melts at a rate of 0.5 cm per hour.*

$$y = -0.5x + 8$$

- c) How will it take for the snow to melt completely?

Let $y = 0$ 2nd TRACE 5 ENTER ← 3 times $x = 16$
 $y = 0$

It will take 16 hours for the snow to melt.

- d) When will the snow melt to a depth of 6 cm?

$y = 6$ 2nd TRACE 5 ENTER ← 3 times $x = 4$

It will take 4 hours.

- e) What are we assuming regarding our answers to parts (c) and (d)?

The snow will melt at a constant rate of 0.5 cm/hr.