

Directions: For the problem below, use a separate piece of paper to write your answers. Your teacher will not count anything you write on this page.

**1**

Jacob pays \$1.50 per hour to park his car at a meter that accepts only dimes or quarters.

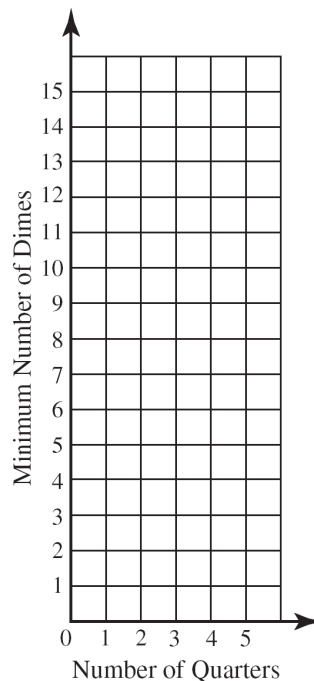
- a. The table shown below represents the number of quarters and the corresponding minimum number of dimes Jacob needs to park his car at this meter for 1 hour. Copy the table into your Student Answer Booklet. Complete the table to show the minimum number of dimes that Jacob would need using the specified number of quarters.

**Number of Quarters and Dimes Needed to Park for 1 Hour**

<b>Number of Quarters</b>	0	1	2	3	4	5
<b>Minimum Number of Dimes</b>	15	13				3

- b. Label the grid in your Student Answer Booklet, as shown below. Graph the data from your completed table on the grid in your Student Answer Booklet.

**Number of Quarters and Dimes  
 Needed to Park for 1 Hour**



- c. Are these points collinear (on the same line)? Use the concept of slope to justify your answer.



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**2**

Sound travels through water at an approximate rate of 1500 meters/second.

- a. Write an equation describing  $d$ , the distance in meters that sound travels in  $t$  seconds.
- b. On the grid in your Student Answer Booklet, graph the equation from part a by choosing three ordered pairs  $(t, d)$  that satisfy the equation. Label the coordinates of the three points you used. Be sure to label your axes.
- c. What is the slope of the line you graphed in part b? Explain the meaning of the slope in terms of distance and time.
- d. A whale-watching boat's sonar determines that it takes sound waves a total of three seconds to reach a pod of whales **and** return to the boat. How many meters is the pod of whales from the boat? Show or explain how you got your answer.