



Sample Activity:
*Guided Exploration: Tardies
and Detentions*

from the Pre-AP workshop

Pre-AP[®]: Strategies in Mathematics –
Functions

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Pre-AP: Strategies in Mathematics – Functions Sample Activity

Guided Exploration: Tardies and Detentions

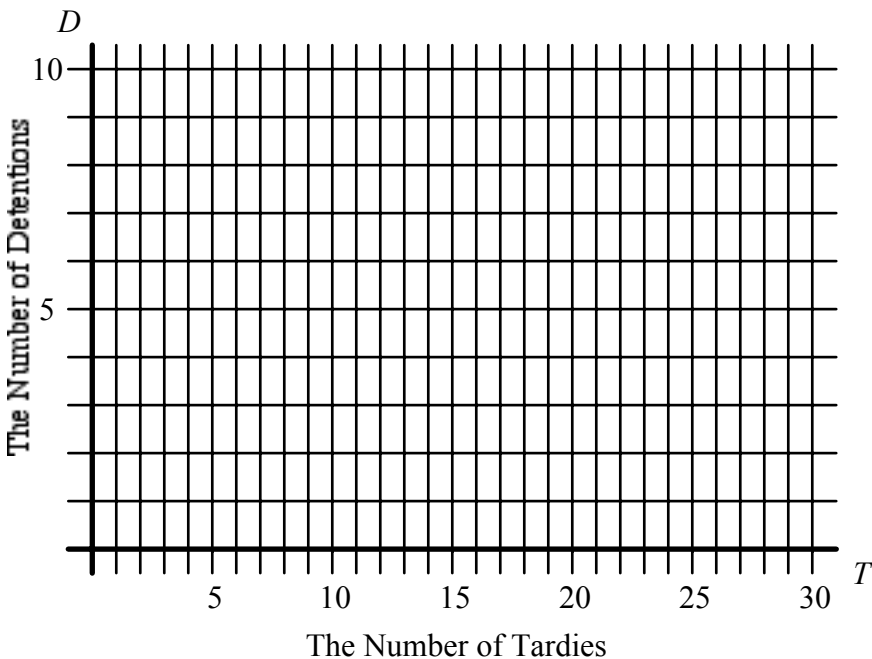
The following statement appears in the student handbook for a middle school. It is the school's policy regarding being tardy to class. The policy states: "one hour of after-school detention will be given to any student who is tardy to class on four separate occasions."

1. Answer the following questions about tardies and detentions.
 - a. How many detentions will a student get who is late to five separate classes?
 - b. How many detentions will a student get who is late to six separate classes?
2. Based on the policy statement given above, complete the table below. The first column gives the number of times a student is tardy to class and the second column gives the total number of one-hour after-school detentions the student must serve.

Total Number of Tardies	Total Number of Detentions
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

3. Describe a pattern you see in the table given in question 2 in words or symbols.

4.
 - a. If a student has earned two detentions, then what can you say about the number of times that the student was late to class? Explain how you arrived at your answer.
 - b. If a student has earned three detentions, then what can you say about the number of times that the student was late to class? Explain how you arrived at your answer.
5. Suppose that a student has 38 tardies. How many detentions must this student serve? Be sure to show how you went about finding your answer.
6.
 - a. Expand the table in question 2 or use your pattern in question 3 to plot the points for tardies and detentions on the coordinate system given below. Use the horizontal axis to denote the number of tardies and the vertical axis to denote the number of detentions.



- b. Should the points in the plot given in question 6 be connected? Justify your answer.
7. Let T denote the total number of tardies and D denote the total number of detentions.
 - a. If $T = 59$, then find D . Be sure to show how you went about finding your answer.