

# The Guitar Class

A music teacher runs a guitar class for 20 weeks.  
The class meets each week in a rented music studio.

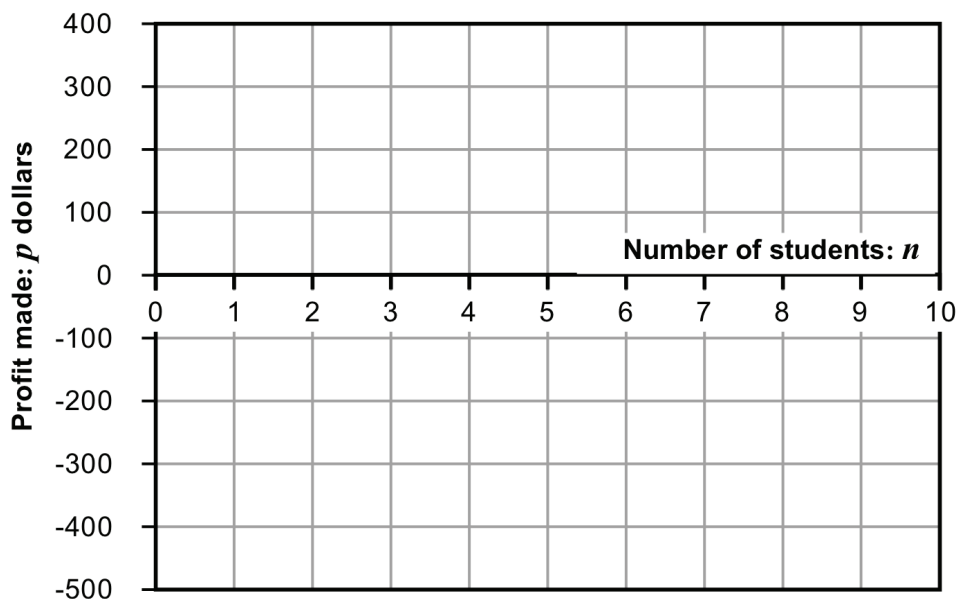
Suppose that:

- It costs the teacher  $c$  dollars to rent the studio for the 20 weeks.
- The class contains  $n$  students.
- Each student pays the teacher a single fee of  $f$  dollars for the course.
- The teacher makes a profit of  $p$  dollars at the end of the course.



1. Suppose that  $c = 400$  and  $f = 70$ . Write an equation to show how the profit made,  $p$ , depends on  $n$ , the number of students attending.

2. Graph your equation and explain the significance of the point where the graph crosses the horizontal axis.



3. Write a formula for calculating  $p$  when you know  $c$ ,  $n$ , and  $f$ .

4. Write a formula for calculating  $f$  when you know  $c$ ,  $n$ , and  $p$ .