Algebra I

School of Rock

Name: _____
Date: _____
Hour: _____

Your friend's band wants to put out a local CD. Since they will just sell them at shows and to friends, the band has decided to burn the discs themselves on the computer (companies that make them for you won't take orders for less than 500 CDs!). They buy a new CD burner for $189.99 and a 4-track recorder for $375 so they can record it themselves in the basement. Blank CD's cost $.30 each, and the cases and printed inserts will cost about $2.00 per CD. Their band has four members and each of them chipped in $50 (all they had!) to help pay for making the CDs. They want to sell their CDs for $5. They have come to you to help them decide if this is worthwhile.

Feel free to do your work below or on a sheet of lined paper, but graphs need to be done accurately on graph paper.

1. Write a rule for the Total Cost for the band.
2. Graph this Cost function. Be sure to choose an appropriate scale for your axes.
3. Write a rule for the band's Revenue (money coming in).
4. Graph your Revenue function on the same set of axes as your Cost function.
5. Profit is how much the band has made after taking out the costs. Write a rule for the band's Profit.
6. Graph your Profit function on the same set of axes (you should have three functions graphed together when you are done).
7. Exactly how many CDs do you need to sell in order to not lose money (to "break even")?
8. Does this answer make sense for this situation? Why or why not?
9. Do you think it is reasonable for the band to sell this many CDs? What advice would you give to the band?

Adapted from Holt High School Mathematics Department