

Name _____ Period _____ Date _____

The Best Summer Job Offer Ever!

Summer is rapidly approaching and you are looking for a job. You just got a fabulous offer in the mail. Here's the letter:

Dear _____,

Your application for a job with *Fly by Night* Widgets for next summer has been reviewed by our personnel department and we would like to inform you that **YOU GOT THE JOB!** You will be working the entire month of July as a widget entrepreneur. As far as payment is concerned, the wage distributor offers you a choice of payment schemes.

Payment plan #1: You can start with \$50 the first day, then you will get an additional \$2 each day. That means you will make \$50 on day #1, \$52 on day #2, \$54 on day #3, and so on for the entire month.

Payment plan #2: You will be paid 1¢ the first day, 2¢ the second, 4¢ the third, 8¢ the fourth and so on for the twenty two days you work.

Payment plan #3: You will be paid 1\$ the first day, 4\$ the second day and 9\$ the third day, 16\$ the fourth day and so on.

Now our liberal fringe benefits includes holidays, Saturdays and Sundays off (at no pay), so that your total number of working days will be 22.

Please circle the plan you wish to have -->

plan 1 plan 2 plan 3

Welcome aboard! We look forward to seeing you next summer.

Sincerely yours,

Mr. & Mrs. Widget

Questions:

1. Which plan did you choose? Why?
2. How much will you make on the 5th day under each of the payment plans? How did you calculate that?
3. For payment plan 1, how would you figure out how much you make on the nth day where n is any number of days from 1 to 22?

4. For payment plan 3, how would you figure out how much you make on the n^{th} day where n is any number of days from 1 to 22?
5. Which plan will make you the most money after 22 days? How much money will you make?
6. If you planned to quit after 7 days of work, which plan should you use? How much money will you make?
7. If you plan to quit after 14 days of work, which plan should you use? How much money will you make?
8. According to your graph and equation of the line, why do you have different answers for questions 3, 4 & 5?
9. According to the graph of all 3 payment plans, on what day is the total money earned for payment plan 1 and 2 equal? (You may have to change the scale of the y-axis on your graph to 0-500 or something like that in order to improve your resolution.) Confirm that with your data table. Approximately how much is the daily pay?
10. According to the graph of all 3 payment plans, on what day is the total money earned for payment plan 2 and 3 equal? Confirm that with your data table. Approximately how much is the daily pay?

Advanced question:

11. Using the equations of a line, when are the equations for payment plan 1 and 3 equal? How many days of work? Confirm that with your data table and graph and with your equations.

Homework assignment

Write a short report outlining which payment plan you would choose depending on whether or not you work 5, 10, 15 or 22 days. Use charts and graphs to support your decision.