

Day 6 Let's Make a Deal with Bill Gates Activity

Date _____ Hour _____

You're sitting in math class, minding your own business, when in walks a Bill Gates kind of guy - a real success story. He's made it big, and now he has a job offer for you. He doesn't give too many details, mumbles something about the possibility of danger. He's going to need you for 30 days, and you'll have to miss school and you've got to make sure your passport's current. The next thing he says is the interesting part.



You'll have your choice of two payment options:

1. One cent on the first day, two cents on the second day, and double your salary every day thereafter for the thirty days; or
2. Exactly \$1,000,000. (That's one million dollars!)

Steve jumps up out of his seat at that. You've got your man, Bill, right here. I'll take that million. I'm out of here. And off he goes on this dangerous million-dollar mission.

So how smart was this guy? Did he make the best choice? Sounds like it at first, but before we decide for sure, let's investigate the first payment option. Complete the table for week 1 below.

Pay with First Option - Week 1		
Day No.	Pay for that Day	Total Pay (In Dollars)
1		
2		
3		
4		
5		
6		
7		

So he worked a whole week and only made \$1.27. That's pretty awful, all right. There's no way to make a million in a month at this rate. Right? Let's check out the second week.

Pay with First Option - Week 2		
Day No.	Pay for that Day	Total Pay (In Dollars)
8		
9		
10		
11		
12		
13		
14		

Well, he would make a little more the second week. At least he's over \$100. But there's still a big difference between \$163.83 and \$1,000,000. Check out the third week.

Pay with First Option- Week 3		
Day No.	Pay for that Day	Total Pay (In Dollars)
15		
16		
17		
18		
19		
20		
21		

We're getting into some serious money here now, over \$20,000, but still nowhere even close to a million. And there's only 10 days left. So it looks like the million dollars is the best deal. We had suspected that all along.

Pay with First Option - Week 4		
Day No.	Pay for that Day	Total Pay (In Dollars)
22		
23		
24		
25		
26		
27		
28		

Hold it! Look what has happened. What's going on here? We went from \$21,000 to over a million in 6 days. This is amazing. Look how fast this pay is growing. Let's keep going.

Pay With First Option – Last Two Days		
Day No.	Pay for that Day	Total Pay (In Dollars)
29		
30		

Write an exponential function to find the amount of pay for any day number.

Want to see what \$10,000,000 in pennies looks like? <http://www.kokogiak.com/megapenny/nine.asp>

Homework: Unit 4 Day 6 Worksheet

Source: <http://math.rice.edu/~lanius/pro/rich.html>