Very Odd Job

I need you to work for me for thirty days. You will work one hour per day. The neat part is I am going to let you decide how you want to be paid. Firstly, if you decide, I will pay you $1,000 per day. Your other option is to be paid one penny on the first day, two pennies on the second day, four pennies on the third, and so on, each day earning twice as many pennies as the day before.

1. How much money will you earn after thirty days under the $1,000 method?

2. Without using a calculator, estimate how much money you will earn after thirty days under the penny method.

3. Which method do you prefer?

<u>Solution</u> to Very Odd Job

Give students several minutes to read the problem and start working. Be sure they all understand how the penny method works. Begin a short table if you need to.

Some students will try and quickly create a table to that goes the entire 30 days. This gets difficult quick.

Normally, I like to take a poll of the class to see who prefers the dollar method and who prefers the penny method. You may also take down a list of all the estimates for the total value of the penny method after 30 days.

Together with your students, fill in a table for the penny method that goes out to the 10^{th} day. On the 10^{th} day, you should earn $5.12, and the first ten days combined will total $10.23. See if any students wish to change their votes at this point.

At this point, it is a good idea to give the students the entire table that is attached here. Doubling is a powerful rate of growth.

Day	Pay
1	.01
2	.02
3	.04
4	.08
5	.16
6	.32
7	.64
8	1.28
9	2.56
10	5.12
11	10.24
12	20.48
13	40.96
14	81.92
15	163.84
16	327.68
17	655.36
18	1,310.72
19	2,621.44
20	5,242.88
21	10,485.76
22	20,971.52
23	41,943.04
24	83,886.08
25	167,772.16
26	335,544.32
27	671,088.64
28	1,342,177.28
29	2,684,354.56
30	5,368,709.12
Total	**10,737,418.23**