

King's Payroll Problem

A wealthy King has a big job for you. He will pay you for 1 month (31 days) according to one of 2 plans. Under plan A, you will get \$30,000 a day. Under plan B, you will get 1¢ the first day, 2¢ the second day, 4¢ the third day, and so on. Each day your pay will double. Which plan should you pick?

Answer: Plan B !

Under Plan A, you make $(\$30,000)(31) = \underline{\$930,000}$.

Under Plan B: (in dollars)

Day	Pay	Day	Pay	Day	Pay
1	.01	11	10.24	21	10,485.76
2	.02	12	20.48	22	20,971.52
3	.04	13	40.96	23	41,943.04
4	.08	14	81.92	24	83,886.08
5	.16	15	163.84	25	167,772.16
6	.32	16	327.68	26	335,544.32
7	.64	17	655.36	27	671,088.64
8	1.28	18	1,310.72	28	1,342,177.28
9	2.56	19	2,621.44	29	2,684,354.56
10	5.12	20	5,242.88	30	5,368,709.12
				31	10,737,418.24

You'll get close to \$11,000,000 just on day 31!

Exercise: What's your total under plan B?