



Problem of the Week

Problem B

Simply Interesting!

A boy named Richard has \$1000 to invest in one of two longterm plans. He intends to withdraw only the interest at the end of each year, but leave his \$1000 invested. The two plans are as follows:

Plan 1: This plan pays \$50 interest each year as long as the original investment is untouched. This \$50 is called 5% simple interest.

Plan 2: This plan pays \$500 interest at the end of the first year. (This \$500 interest is 50% of the original investment.) At the end of each of the following years, the \$1000 investment earns half as much interest as the year before. (So in the second year it would only earn \$250 in interest.)



- a) After 5 years, what is the total interest that Richard would make from each plan? After 10 years?
- b) Which option should he choose to maximize the total interest if he invests for 15 years?
- c) If Richard left his \$1000 invested for a very long time, which plan do you think would provide the greatest total interest?

Year	Plan 1			Plan 2		
	Investment	Interest	Total Interest	Investment	Interest	Total Interest
1	\$1000	\$50	\$ 50	\$1000	\$500	\$500
2	\$1000	\$50	\$100	\$1000	\$250	\$750
3	\$1000			\$1000		
4	\$1000			\$1000		
5	\$1000			\$1000		
6	\$1000			\$1000		
7	\$1000			\$1000		
8	\$1000			\$1000		
9	\$1000			\$1000		
10	\$1000			\$1000		
11	\$1000			\$1000		
12	\$1000			\$1000		
13	\$1000			\$1000		
14	\$1000			\$1000		
15	\$1000			\$1000		

