

- For the game show *Who Wants To Be A Millionaire?*, the dollar values of each question are shown in the following table (where $K = 1000$).

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Value	100	200	300	500	1K	2K	4K	8K	16K	32K	64K	125K	250K	500K	1000K

Between which two questions is the percent increase of the value the smallest?

- (A) From 1 to 2 (B) From 2 to 3 (C) From 3 to 4 (D) From 11 to 12 (E) From 14 to 15

2001 AMC 8, Problem #17— “The percent increase from a to b is given by $\frac{b-a}{a}(100\%)$ ”

- **Solution**

(B) The percent increase from a to b is given by $\frac{b-a}{a}(100\%)$. For example, the percent increase for the first two questions is $\frac{200-100}{100}(100\%) = 100\%$. Each time the amount doubles there is a 100% increase. The only exceptions in this game are 2 to 3 (50%), 3 to 4 ($66\frac{2}{3}\%$) and 11 to 12 (about 95%). The answer is (B).

Difficulty: Medium-hard

NCTM Standard: Algebra Standard: Analyze change in various contexts

Mathworld.com Classification: Number Theory > Arithmetic > Fractions > Percent