

درس و تست ریاضی

عددهای صحیح و گویا

علی هاشمی

۰۹۱۲۷۷۴۴۲۸۱ - ۰۹۱۲۷۷۴۴۳۸۹

۱۶- حاصل عبارت M کدام است؟

$$M = \frac{k}{\frac{k}{\frac{k}{\frac{k}{\frac{k}{\ddots}}}}}$$

The diagram shows a nested fraction structure where the denominator of each level is the entire expression. The innermost part is a blue oval containing three dots. A red oval encloses the entire fraction structure, with a red arrow pointing to it from the right.

$$M - k = 0 \rightarrow M = k$$

The equation is written in purple ink. A purple arrow points from the first equation to the second. The result $M = k$ is circled in purple.

$$M = k - \frac{k}{M} \xrightarrow{\times M} M^2 = kM - k$$

The derivation is written in blue ink. It starts with the equation $M = k - \frac{k}{M}$ and multiplies both sides by M to get $M^2 = kM - k$.

$$M^2 - kM + k = 0 \rightarrow (M - k)(M - 1) = 0$$

The final steps are written in green ink. The quadratic equation $M^2 - kM + k = 0$ is factored into $(M - k)(M - 1) = 0$.

