Grade 9 Mathematics Worksheet

Number patterns

Questions:

1. Mr Peters has asked his learners to form a sequence using the following rules:
   - Use the number $\frac{\sqrt{x}}{2}$ as a first term
   - To find the next terms, you multiply the previous term by $\frac{1}{2}x^{\frac{1}{3}}$

   If the second term in this pattern is $\frac{\sqrt[6]{x^5}}{4}$, the 5th term will be….

   (A) $16x\sqrt{x}$

   (B) $\frac{x\sqrt[6]{x^5}}{32}$

   (C) $\frac{x\sqrt[6]{x}}{8}$

   (D) $\frac{x^{\frac{11}{6}}}{16}$

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Solution:

1.

$T_1 = \frac{\sqrt{x}}{2}$	$T_2 = \frac{\sqrt[6]{x^5}}{4}$	$T_3 = \frac{x^{\frac{7}{6}}}{8} = \frac{x\sqrt[6]{x}}{8}$	$T_4 = \frac{x^{\frac{9}{6}}}{16} = \frac{x^{\frac{3}{2}}}{16} = \frac{x\sqrt{x}}{16}$	$T_5 = \frac{x^{\frac{11}{6}}}{32} = \frac{x\sqrt[6]{x^5}}{32}$
Correct option is B.				

The choice of different based powers is deliberate to test the fractions and the various operations with fraction.