ALG032003 Algebra 1 Practice Unit Test Chapter 8

1. Find the number of grams of polonium remaining after 276 days if 67 grams of the isotope were initially present. The half-life of polonium is 138 days.

2. Explain the meaning of the half-life of a radioactive substance.

3. Simplify: $\frac{x^{-6}}{x^{-7}}$

4. Evaluate (assume $x \neq 0$ and $y \neq 0$): $6x^0 + 7y^0$

   [A] 0 [B] $6x + 7y$ [C] $13xy$ [D] 13

5. Write the expression so that it contains only positive exponents.
   $\frac{q^{-7}r^{-3}}{s^{-4}}$

   [A] $-\frac{s^4}{q^7r^3}$ [B] $\frac{s^4}{q^7r^3}$ [C] $q^7r^3s^4$ [D] $-\frac{q^7r^3}{s^4}$

6. Write the expression so that it contains only positive exponents.
   $\frac{v^{-6}w^{-9}}{x^{-2}}$

   [A] $-\frac{x^2}{v^6w^9}$ [B] $v^6w^9x^2$ [C] $\frac{x^2}{v^6w^9}$ [D] $-\frac{v^6w^9}{x^2}$

7. Write 0.0000324 in scientific notation.

   [A] 0.324×10^{-4} [B] 0.324×10^{-6} [C] 3.24×10^{-5} [D] 324