

Name _____

Section 6-6 Day 3

1. The half-life of carbon-14 is 5700 years. Find the age to the nearest year of a sample in which 40% of the radioactive nuclei originally present have decayed.

[A] 4651 years [B] 5201 years [C] 4201 years [D] 4101 years

[1] _____

2. If \$2500 is invested at an interest rate of 7%, compounded continuously, determine the balance in the account after 4 years. Use the formula $A = Pe^{rt}$.

[A] \$3276.99 [B] \$3307.82 [C] \$3547.67 [D] \$18,472.64

[2] _____

3. The half-life of carbon-14 is 5700 years. Find the percentage of the original carbon-14 nuclei that remains in a sample after 3931 years have passed.

[3] _____

4. If \$9200 is invested at an interest rate of 5%, compounded continuously, determine the balance in the account after 2 years. Use the formula $A = Pe^{rt}$.

[4] _____

Evaluate the expression to the nearest thousandth. If the expression is undefined, write *undefined*.

5. $\ln 6295$ [A] 3.799 [B] 7.638 [C] 8.748 [D] 2.689

[5] _____

6. e^3 [A] 2.718 [B] 3 [C] 20.086 [D] 8.155

[6] _____

7. $\ln \sqrt[3]{e}$

[7] _____

8. $3e^{\frac{1}{4}}$

[8] _____