Unit 7.2 Review – Exponential Equations and Applications

**Solving Equations Review:**

1. $9^{3x+16}=81^{x+5}$ 2. $25^{3x-4}\geq 125$
2.  4. $16^{2x}=64$

5.  6. 

7.  8. 

**Applications Review**:   

1. Luke deposits $2000 into a bank account that pays 5% interest compounded monthly. Find the balance in the account after 4 years.
2. The value of Barbie Real Dream House is $12,500,000. The house is in a prime location and appreciates at a rate of 7% per year. How much will the house be worth in 5 years?
3. A certain radioactive element decays at a rate of 21% per month. If the starting amount was 32 ounces, how much will be left after 1 year?
4. How much should Alex deposit into an account that pays 5% annual interest compounded quarterly so that she will have $10,000 in 6 years?
5. Given $y=3\left(1.25\right)^{x} $Determine if the function is growth or decay. Then determine its growth/decay factor and its growth/decay percent.
6. Matt bought a new car at a cost of $30,000.  The car depreciates approximately 13% of its value each year. Decay Factor? Decay Percent?