Ch. 6 to 7.3 Review 2

1. Determine the number of terms in the geometric sequence: $\frac{1}{128},\frac{1}{32},\frac{1}{8}, …, 2048$

2. A new well produces 48000 L of water in the first month. If the volume of water pumped decreases by 6% each month, determine the total volume of water, in litres, that will be pumped from the well before it runs dry.

3. In a geometric series, if the sum of the first 12 terms is 20475 and the common ratio is 2, determine the value of the first term.

4. Evaluate: a) $\sum\_{k=5}^{13}3(2)^{k-2}$ b) $\sum\_{k=1}^{\infty }\frac{1}{3^{k}}$

5. Laura invests in a bond which pays interest at the rate of 2.5% per year compounded weekly. After 10 years the value of the bond has increased to $1267.28. What was the original value of the bond?

6. Mr. H worked for SD41 for 5 years. His annual salary was $38000 during his first year. Each year his salary increased by 2% over the previous year’s salary. Suppose he was able to keep half of his salary for a house he would like to purchase that requires a down payment of $100,000. Can he afford it?

7. Simplify: $216^{x}÷\left(1296^{5x-4}×36^{x+5}\right)$

8. Solve: a) $\left(\frac{1}{4}\right)^{x-12}=32^{2x+5}$ b) $\sqrt[4]{\frac{25^{x-1}}{125^{3x+2}}}=5^{x}\left(625^{x-2}\right)$

9. Graph $y=-2\left(4^{-2x+6}\right)-1$

3. 511.75

4. a) 12264 b) 0.5

7. $6^{-19x+6}$

8. a)x=-1 b)