

Name: _____

Given: $S_k = \frac{a_m(1-r^k)}{1-r}$

Find $\sum_{n=6}^{23} 2^n = 2^6 + 2^7 + \dots + 2^{23}$

geometric series $r=2$

$$\begin{aligned} K &= \# \text{ of terms} \\ &= 23 - 6 + 1 \\ &= 18 \end{aligned}$$

$$a_m = 2^6$$

$$S_{18} = \frac{2^6 (1 - 2^{18})}{(1 - 2)}$$

$$= 16777152$$