

1. Find

$$\sum_{k=3}^{10} 2^k.$$

2. Find

$$4 - 16 + 64 - 256 + \cdots + 4^7.$$

3. Find

$$\sum_{j=2}^{\infty} \left(-\frac{1}{7}\right)^j$$

4. Consider #2 from the previous homework. Suppose the length of the initial segment is 2, and the width of each iteration is also 2. What is the total length of the fifth iteration?
5. Consider #3 from the previous homework. Suppose that the length of the initial segment is 6, and that the width of each iteration is also 6.
- (a) How many iterations will it take for the total length of the path to exceed 100?
- (b) How many iterations will it take for the total length of the path to exceed 1,000,000?
6. Suppose your screen is 1000 pixels wide and 800 pixels deep (1000×800). Find the two functions (one for x , and one for y) which convert from user space to screen space. For review, you may search for “processing screen space” on my blog www.cre8math.com. The title of the post is “Making Movies with Processing I.”