

$$\#7) a_n = 4n + 8 \quad \text{Arithmetic}$$

$$a_1 = 4(1) + 8 = 12 \quad \text{Sequence?}$$

$$a_2 = 4(2) + 8 = 16 \quad \left. \begin{array}{l} 4 \\ 4 \end{array} \right\}$$

$$a_3 = 4(3) + 8 = 20$$

Geometric Sequence:

Common Ratio

$3, 6, 12, 24, 48$

$$\frac{6}{3} \quad \frac{12}{6} \quad \frac{24}{12}$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$2 \quad 2 \quad 2$$

Common Ratio

$$\frac{1}{3}, \frac{1}{9}, \frac{1}{27}, \frac{1}{81}$$

$$\frac{1}{3} \cdot \frac{1}{3} = \frac{1}{9}$$

# Explicit Formula Geometric Sequence

$$a_n = a_1 r^{n-1}$$

$\uparrow$   
 First Term

$\nwarrow$   
 Ratio

4, 12, 36

10<sup>th</sup> term

Ratio = 3

$$a_n = 4 \cdot 3^{n-1}$$

$$a_{10} = 4 \cdot 3^{10-1}$$

$$a_{10} = 4 \cdot 3^9$$

$$= 4 \cdot 19,683$$

$$a_{10} = 78,732$$

Parentheses  
 Exponents  
 Multiplication  
 Division  
 Addition  
 Subtraction