

$$\boxed{14} \quad \frac{v_{n+1}}{v_n} = \frac{2 \times 3^{n+1}}{2 \times 3^n} = \frac{3^{n+1}}{3^n} = 3^{n+1-n} = 3$$

$$\boxed{15} \quad \frac{w_{n+1}}{w_n} = \frac{3 \times \left(\frac{1}{2}\right)^{n+1}}{3 \times \left(\frac{1}{2}\right)^n} = \left(\frac{1}{2}\right)^{n+1-n} = \frac{1}{2}$$