

Slide the Eraser – Sequence and Series Answers

1. Arithmetic ($d = -7$)

$$\begin{aligned}a_n &= 16 + (n - 1)(-7) \\ &= 16 + -7n + 7 \\ &= -7n + 23\end{aligned}$$

2. Geometric ($r = 3/2 = 1.5$)

$$a_n = 12 \left(\frac{3}{2} \right)^{n-1} = 12(1.5)^{n-1}$$

3. $a_1 = 5$ and $a_n = a_{n-1} + 4$

$$\begin{aligned}4. \quad \frac{1}{2}r^3 &= 4 & \frac{1}{2}, \underline{1}, \underline{2}, 4 \\ r^3 &= 8 \\ r &= 2\end{aligned}$$

5. Arithmetic ($d = -6$)

$$S_{33} = \frac{33(12 + a_{33})}{2} \quad a_{33} = 12 + (33-1)(-6) = -180$$

$$S_{33} = \frac{33(12 + -180)}{2} = -2772$$

6. Geometric ($r = -3$)

$$S_{12} = \frac{-2(1 - (-3)^{12})}{1 - (-3)} = \frac{-2(1 - 531441)}{4} = 265720$$

7. $5 + 12 + 21 + 32 + 45 = 115$

8. -3.74995