

Find the  $n$ th term of the geometric sequence.

$$a_1 = 4, r = \frac{3}{5}, \quad n = 8$$

$$a_4 = -\frac{40}{21}, a_7 = \frac{320}{729}, \quad n = 12$$

$$7, 21, 63, \dots \quad n = 15$$

Find the sum.

$$\sum_{n=1}^9 2^{n-1}$$

$$\sum_{i=1}^7 64 \left(-\frac{1}{2}\right)^{i-1}$$

$$\sum_{n=0}^{20} 3 \left(\frac{3}{2}\right)^n$$

$$\sum_{i=0}^5 32 \left(\frac{1}{4}\right)^i$$

Find the sum.

$$\sum_{n=0}^{\infty} \left(\frac{1}{2}\right)^n$$

$$\sum_{n=0}^{\infty} 2 \left(\frac{2}{3}\right)^n$$

$$\sum_{n=0}^{\infty} 4 \left(-\frac{1}{2}\right)^n$$

$$\sum_{n=0}^{\infty} 10 \left(\frac{5}{4}\right)^n$$

Use summation notation to find the sum.

$$5+15+45+\dots+3645$$

$$2 - \frac{1}{2} + \frac{1}{8} - \dots + \frac{1}{2048}$$

$$8 + 6 + \frac{9}{2} + \frac{27}{8} \dots$$