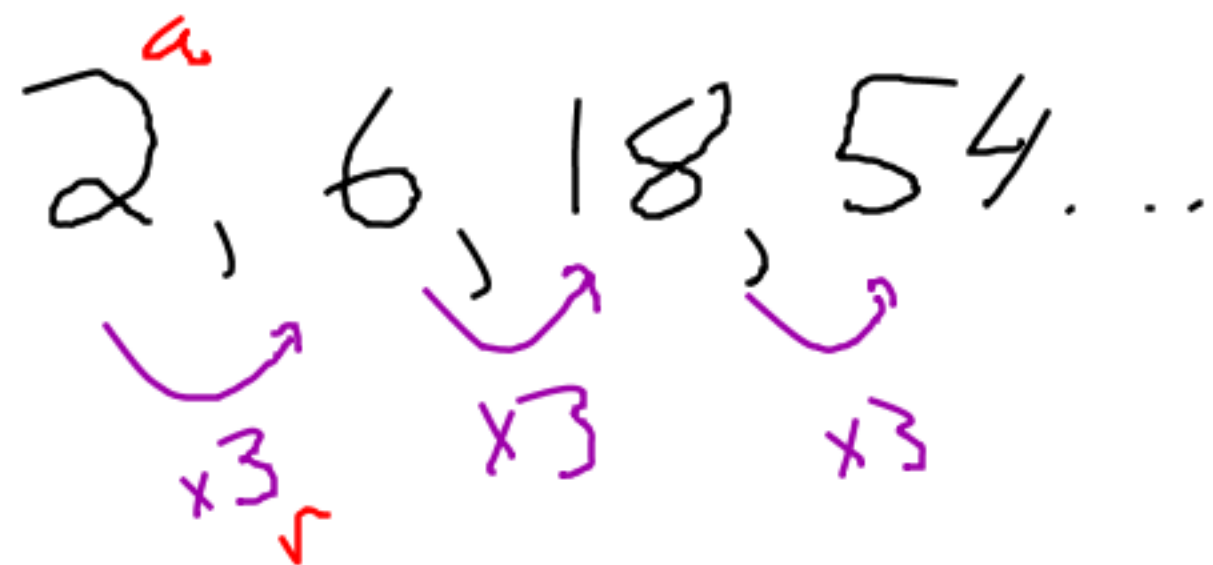


7.2] Geometric Sequences

^a
2, 6, 18, 54, ...



$$t_n = a r^{n-1}$$



initial term

t_1

$$t_n = 2(3^{n-1})$$

$$-\frac{1}{8}, \frac{1}{2}, -2, \dots$$

Find t_n and t_9

$$t_n = ar^{n-1}$$

$$t_n = \frac{-1}{8} (-4)^{n-1}$$

$$\frac{\frac{-1}{8}}{\frac{1}{2}} = \frac{1}{2} \times \frac{-8}{1} = \frac{-8}{2} = -4$$

$$t_9 = \frac{-1}{8} (-4)^{9-1}$$

$$t_9 = \frac{-1}{8} (65536)$$

$$= 8192$$

How many terms in the sequence:

$$\underbrace{52612659, 17537553, \dots, 11}_a$$

$$r = \frac{17537553}{52612659} = \frac{1}{3}$$

$$t_n = 52612659 \left(\frac{1}{3} \right)^{n-1}$$

$$t_{15} = 11$$