



Explicit Formula

$$a_1 + d(n-1)$$

d is the common difference
 a_1 is the first term

$$-3 - 11(n-1)$$

$$-3 - 11n + 11$$

$$8 - 11n$$

$$12 - 7(n-1)$$

$$-100 + 50(n-1)$$

$$-100 + 50n - 50$$

$$-150 + 50n$$

$$a_1 = 170$$

$$d = -85 \quad a_1 + d(n-1) = 170 - 85(n-1)$$

$$19 - 19(n-1)$$

$$19 - 19n + 19$$

$$38 - 19n$$

$$-11 + 8(n-1)$$

$$-51 + 17(n-1)$$

$$-51 + 17n - 17$$

$$-68 + 17n$$

Explicit Formula



$$c(n) = 8 - 13(n-1)$$

Recursive Formula



$$c(n) = c(n-1) - 13$$

Recursive Formula = $f(1) = A$ — $a_1 = \text{first term}$

$$f(n) = f(n-1) + B$$

common difference

$$a_1 = 26$$

$$26 - 16(n-1)$$

$$d = -16$$

$$26 - 16n + 16$$

$$42 - 16n$$

Geometric Sequences

2, 6, 18, 54
a₁ = 2 r = 3 — common ratio
Sequence

Geometric series: sum of
sequence

i.e. 2, 6, 18

$$2 + 6 + 18$$

$$\begin{array}{r} 26 \\ 8 \end{array}$$

$$\boxed{26}$$

$$-\frac{1}{32}, \frac{1}{8}, -\frac{1}{2}, 2, \dots$$

$\underbrace{\hspace{1.5cm}}_{-4} \quad \underbrace{\hspace{1.5cm}}_{-4} \quad \underbrace{\hspace{1.5cm}}_{-4}$

$$-\frac{128}{27}, \frac{32}{9}, -\frac{8}{3}$$

$\underbrace{\hspace{1.5cm}}_{\div -\frac{4}{3}} \quad \underbrace{\hspace{1.5cm}}_{\div -\frac{4}{3}}$

$$\Rightarrow -\frac{8}{3} \div -\frac{4}{3}$$

$$-\frac{8}{3} \cdot -\frac{3}{4} = \frac{24}{12}$$

$$\frac{4}{9}, -\frac{4}{3}, 4,$$

$$= \boxed{2}$$

$$a(1) = \frac{5}{3}$$

$$a(2) = a(2-1) \cdot -9$$

$$= a(1) \cdot -9$$

$$a(n) = a(n-1) \cdot (-9)$$

$$\frac{5}{3} \cdot -9$$

$$a(2) = -15$$

$$a(3) = a(n-1) \cdot (-9)$$

$$= a(3-1) \cdot -9$$

$$= a(2) \cdot -9$$



$$= -15 \cdot -9$$

$$= \boxed{135}$$

$$a_1 = \frac{5}{3} ((-9)^{i-1})$$

$$= \frac{5}{3} ((-9)^{3-1=2})$$

$$= \frac{5}{3} (81)$$

$$= \boxed{135}$$

$$a(1) = 20$$

$$a(n) = a(n-1) \cdot \frac{3}{2}$$

$$a(n) = \frac{3}{2} (-2)^{n-1}$$

$$= \frac{3}{2} (-2)^{3-1=2}$$

$$= \frac{3}{2} (-2)^2$$

$$= \frac{3}{2} (4) = \boxed{6}$$

$$a_1 = 20 \cdot \left(\left(\frac{3}{2}\right)^{i-1}\right)$$

$$a_3 = 20 \cdot \left(\left(\frac{3}{2}\right)^{3-1=2}\right)$$

$$= 20 \cdot \left(\frac{9}{4}\right)$$

$$= \boxed{45}$$

1, 2, 4, 8

U U U

$\times 2 \times 2 \times 2$

— times 2 each so common ratio (r) = 2

$$r = 2$$



explicit formula

$$a(n) = k \cdot r^{n-1}$$

Recursive formula

$$\begin{cases} a(1) = k \\ a(n) = a(n-1) \cdot r \end{cases}$$

$$-71 \cdot (4.2)^{n-1}$$

$$4 + 3.2(n-1)$$

$$g(1) = 4$$

$$g(2) = 4 + 3.2(2-1) = 4 + 3.2 = 7.2$$

$$g(3) = 4 + 3.2(3-1) = 4 + 6.4 = 10.4$$

$$g(4) = 4 + 3.2(4-1) = 4 + 9.6 = 13.6$$

$$\begin{cases} g(1) = 10 \\ g(n) = g(n-1) - 7.5 \end{cases}$$

$$g(n) = 10 - 7.5(n-1)$$

$$g(3) = 10 - 7.5(3-1)$$

$$= 10 - 7.5(2)$$

$$= 10 - 15$$

$$= \boxed{-5}$$

$$f(n) = -7 + 3.5(n-1)$$

$$f(3) = -7 + 3.5(3-1)$$

$$-7 + 10.5 - 3.5$$

$$-7 + 7$$

$$\boxed{0}$$

$$-54 \cdot \left(\frac{4}{3}\right)^{n-1} = b(n)$$

$$b(4) = -54 \cdot \left(\frac{4}{3}\right)^{4-1} = \boxed{128}$$

$$54 + a(n-1)$$

$$54 + a_n - a$$

$$45 + a_n$$

$$\begin{cases} d(1) = 3 \end{cases}$$

$$\begin{cases} d(n) = d(n-1) - 14 \end{cases}$$

$$d(n) = 3 - 14(n-1)$$

$$d(3) = 3 - 14(3-1)$$

$$3 - 28$$

$$-25$$

$$-9 \cdot (3)^{n-1}$$

$$4 \cdot (-0.5)^{n-1}$$