#4.

Age	6	7	8
N	1	2	3

June 5

$1.50 $2.25 $3.00

+0.75 +0.75 = d

Arithematic sequence

$t_n = a + (n-1)d$

$t_{14} = 1.50 + (14-1)\,0.75$

$t_{14} = 1.50 + 9.75$

$t_{14} = \$11.25$

* 19 years old $\Rightarrow N = ?$

$N = 19 - 5 = 14$

$t_{14} = ?$

∴ when he is 19 years old, he will receive $11.25

5.

n	1	2	3	4
	1896	1900	1904	1908....

+4 +4 +4 = d → Arithematic sequence.

$n = 12, \quad t_{12} = ?$

$t_n = a + d(n-1)$

$t_{12} = 1896 + 4(12-1)$

$t_{12} = 1896 + 44 = 1940$

∴ The 12th olympic was held in 1940.

6.

n	1	2	3	....	20
Virus	1	2	4	.....	?

×2 ×2 Geometric sequence

When $n = 100$, $t_n = ?$

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

$t_{20} = 1(2)^{100-1} = 2^{99} = 6.3383 \times 10^{29}$

N 1 2 3

#7. 1, 3, 9 .....

×3 ×3 $r=3$ → Geometric sequence

a) When $n=7$, sum of total people → series

$$S_n = \frac{a(r^n-1)}{r-1}, \quad r \neq 1$$

$$S_7 = \frac{1(3^7-1)}{3-1} = \frac{2186}{2} = 1093$$

b) $n=10$, how many people? → $t_{10}=?$ → sequence

$$t_{10} = a(r)^{n-1}$$

$$= 1(3)^{10-1} = 3^9 = 19683$$

#8.

Month	Jan	Feb	March
N	1	2	3
	$100	$200	$400

×2 ×2 →

* Dec 31 ⇒ N = 12

12 = ?

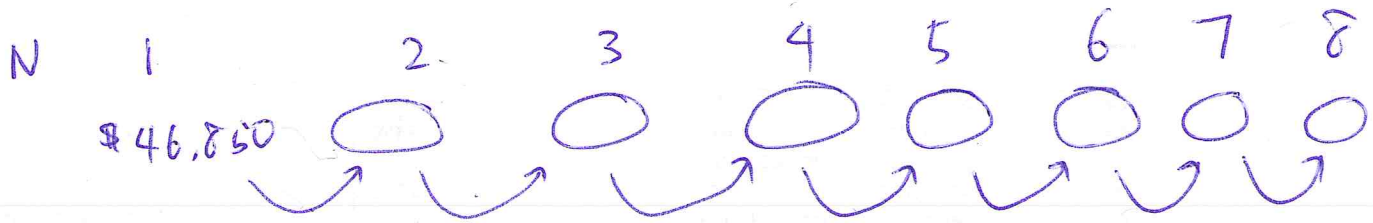
$$t_{12} = a(r)^{n-1}$$

$$t_{12} = 100(2)^{12-1} = 100 \times 2^{11} = 204800$$

#11. N I R $ 8 3

$46,850 $56,650 $

$d = \frac{9800}{7} = 1400$ a year 9800 → Arithmetic



(a) Ari seq: $t_n = a + (n-1)d$

$t_5 = 46,850 + (5-1)1400$

$= 46,850 + 5600 = 52,450$

(b) $S_{10} = \frac{n}{2}[2a + (n-1)d]$

$= \frac{10}{2}[(2 \cdot 46,850) + (10-1)1400]$

$= 5[93700 + 12600]$

$= 531,500$