

$n$	0	1	2	3
$a_i$	$a_0$	$a_1$	$a_2$	$a_3$

$$a_n = 2n \quad \begin{array}{l} n=0 \quad a_0=0 \\ n=1 \quad a_1=2 \\ n=2 \quad a_2=4 \end{array}$$

$$\begin{array}{l} a_1 = 2 \\ a_2 = 3 \\ a_3 = 4 \\ a_4 = 5 \end{array} \quad \begin{array}{l} \boxed{a_{m+1} = a_m + 1} \\ \begin{array}{l} z=m+1 \\ m=1 \end{array} \quad \boxed{a_2 = a_1 + 1} \\ m+1=3 \quad a_3 = a_2 + 1 \\ m=2 \end{array}$$

**ESERCIZIO**  $\boxed{a_{m+1} = a_m}$  scrivere i primi 5 termini della successione

$$a_1, a_2, a_3, a_4 = ?$$

$$a_1 \quad m+1=1 \Rightarrow m=0 \quad a_1 = \frac{a_0}{2}$$

$$a_1 = 1$$

$$a_2 \quad m+1=2 \Rightarrow m=1 \quad a_2 = \frac{a_1}{2}$$

$$a_2 = \frac{1}{2}$$

$$a_3 \quad m+1=3 \Rightarrow m=2 \quad a_3 = \frac{a_2}{2}$$

$$a_3 = \frac{1}{4} \quad \frac{1}{2} = \frac{1}{2} \times \frac{1}{2}$$

$$a_4 \quad m+1=4 \quad m=3 \quad a_4 = \frac{a_3}{2}$$

$$a_4 = \frac{1}{8}$$

**ESERCIZIO (PRINCIPIO INDUZIONE)**

$$P(n): 1+2+3+\dots+n = \frac{n(n+1)}{2}$$

(1)  $P(1)$  vera? è vero!

$$\frac{1 \cdot (1+1)}{2} = \frac{2}{2} = 1$$

$P(1)$  È VERA! SI

(2) Suppongo vera  $P(n): 1+2+3+\dots+n = \frac{n(n+1)}{2}$

(3) Dimostro  $P(n+1)$  è vera!

$$P(n+1): 1+2+3+\dots+n+(n+1) = \frac{(n+1)(n+1+1)}{2} = \frac{(n+1)(n+2)}{2}$$

$$\begin{aligned} 1+2+3+\dots+n+(n+1) &= \frac{n(n+1)}{2} + (n+1) = \\ &= \frac{n(n+1) + 2(n+1)}{2} = \frac{(n+1)(n+2)}{2} \end{aligned}$$





