15

$29 + 28 + 27 + 26 + 25 + \ldots + 1$

$$\sum_{K=1}^{29} K = \frac{29(30)}{2} = 29(15)$$

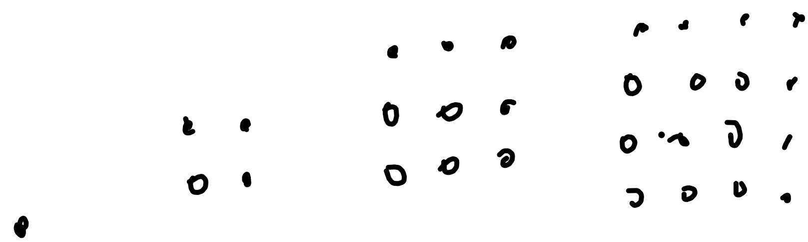
10 a $\quad 1, 4, 9, 16, 25, \ldots$

$$a_n = n^2$$

b $\quad 1, 3, 5, 7, 9, \ldots$

$$b_n = 2n - 1$$

c



$$\circ \rightarrow \; c_n = (n-1)^2$$

$$a_n - b_n = c_n$$

$$n^2 - (2n-1) \longleftrightarrow n^2 - 2n + 1$$

12

C	300		280		263		249
ΔC		-20		-17		-14	

marginal cost.

a $\boxed{a_n = -20 + 3(n-1)}$

$a_5 = -20 + 12 = -8$

$$C_n = 300 + \sum_{k=1}^{n-1} a_k$$

$1, 5, 9, 13, 17, \ldots\ldots, 49$

13th.

$$\boxed{a_n = 1 + 4(n-1)}$$

$$\sum_{i=1}^{13} [1 + 4(i-1)] = 13\left(\frac{49+1}{2}\right)$$

$$= \sum_{i=0}^{12} 4i + 1$$

finite: $\sum_{n=1}^{k} a_1 r^{n-1} = \frac{a_1(1-r^k)}{1-r}$

infinite $\sum_{n=1}^{\infty} a_1 r^{n-1} = \frac{a_1}{1-r}$

$\boxed{14}$

8000

$8000(1.02)$

$8000(1.02)^2$

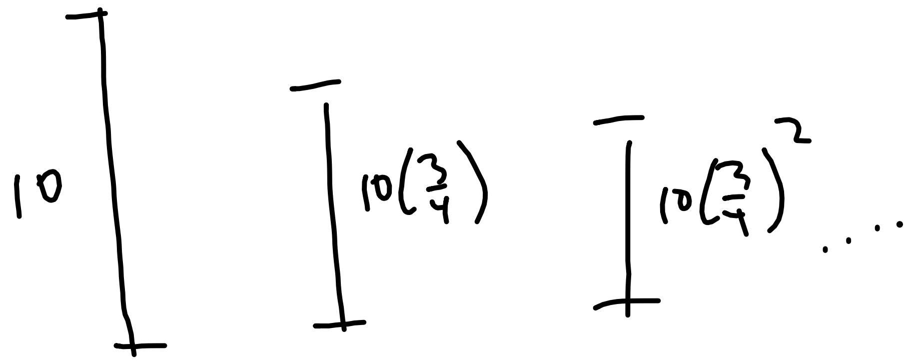
$8000(1.02)^3$

$8000(1.02)^3(1.035)$

$8000(1.02)^3(1.035)^2$

$8000(1.02)^3(1.035)^3$

$\boxed{21}$



a nth bounce it rises to $10\left(\frac{3}{4}\right)^n$

b $10+2\left[\sum_{i=1}^{4}10\left(\frac{3}{4}\right)^i\right]$

c $10+2\left[\sum_{i=1}^{n}10\left(\frac{3}{4}\right)^i\right]$