

**Subject 36**  
**Sequences**

**Please, don't write on the exam paper.**

**Exercise 1**

An object is dropped from an airplane. During the first second, the object falls 4.9 m. During the 2nd second, it falls 14.7 m. During the third second, it falls 24.5 m. During the fourth second, it falls 34.3 m.

- 1) If this pattern continues, how far will the object fall during the tenth second?
- 2) Find the total distance the object will fall after 10 seconds.

**Exercise 2**

In the early growth of an embryo, one human cell divides into two cells, each of which divides into two cells and so on.

What is the number of cells after the 12<sup>th</sup> division ?

**Exercise 3**

The length of the first loop of a spring is 20 inches. The length of the second loop is  $\frac{9}{10}$  of the length of the first loop. The length of the third loop is  $\frac{9}{10}$  of the length of the second loop, and so on. The spring has 10 loops.

What is the length of the spring? (round to the nearest hundredth)

**Vocabulary**

spring : ressort  
loop : boucle

