

## REINFORCEMENT ACTIVITIES

**Subject:** Mathematics

**Grade:** 9°

**Period:** II

**Year:** 2019

### SUGGESTION

*Each period, the teacher formulates a problematizing question or situation related to the learning goals that help the student to train him/herself and get ready to prove his/her knowledge and proficiency levels in each area. This process is scheduled for the week in May from 20<sup>th</sup> to 24<sup>th</sup>. The student should consult the bibliographic references cited by the teacher and turn in three academic products for the period written with basic standards to give account for the skills acquired.*

#### 1. Problematizing question:

Is the function that defines the growth behavior of the population linear or quadratic?

#### 2. Learning Goals

Know how to apply the straight function and the concept of slope in real situations.

#### 3. Academic products

- Basic concept of the function concept.
- Notation and properties of a function.
- Linear function (application problems).
- Straight line (pending intercept, slope and general equations).
- Review of basic concepts about descriptive statistics.
- Measures of dispersion..

#### 4. Bibliographic references

- Activity guide book.
- Bibliobanco Book.
- Notes from classes.
- Libro Bibliobanco.
- Videos de youtube:  
<https://www.youtube.com/watch?v=52tpYI2tTqk>  
<https://www.youtube.com/watch?v=IL3UCuXrUzE>

1. Taking into account the concepts of mathematical relations, find the domain and the range of the following relations:

$$R = \{(x, y) \mid x \in \mathbb{R} / y = \frac{1}{x^2}\}$$

With  $\mathbb{R}$  the real numbers. Is this relation a function? If it is a function, what class of function is it? Explain.

2. Construct a function using sagittal diagrams that is surjective but not injective. Specify the domain and range of that function.
3. Newborn blue whales are approximately 24 feet long and weigh 3 tons. The young whales are suckled for 7 months and, at the time of weaning, they are often 53 feet long and weigh 23 tons. Denote with  $L$  and  $W$  the length (in feet) and the weight (in tons), respectively, of a whale that is  $t$  months old. If  $L$  and  $t$  are linearly related express  $L$  in terms of  $t$  in addition, what is the daily increase in the length of a calf? (Use 1 month equal to 30 days). If  $W$  and  $t$  are linearly related, express  $W$  in terms of  $t$ . What is the daily increase in the weight of the calf?
4. Given  $A(-3, 1)$  and  $B(5, 4)$ , find the general equation of the perpendicular bisector  $L$  of the line segment  $AB$ .
5. Find the equation of the line that passes through  $P(5, -7)$  that is parallel to the line  $6x + 3y = 4$ .