

SCHOOL YEAR: 2019-2020

SEMESTER: AUGUST-DECEMBER 2019

STAGE 3 INTEGRATIVE LABORATORY

DATE: OCTOBER 2019

MADE BY: FUNCTIONS AND RELATIONS ACADEMY

ACADEMY COORDINATOR: DRA. MARÍA DEL PILAR VERA ARREOLA

EDUCATIVE PROGRAM: PROPAEDEUTIC

NAME: _____

GROUP: _____

R.N. _____

GRADE _____

Read the text carefully and answer each problem, write your procedure clearly, otherwise your answer will be considered incorrect. Remember to check your answers at the end.

Maximum time: 50 minutes

I. Instructions: Read the following and answer correctly.

1. It is the set of points in the Cartesian plane that meet a certain condition; that is, the curve formed by the points that satisfy a given equation. _____
2. It is a line fragment between two points called extremes. _____
3. Segment that is characterized only by its distance. _____
4. Segment that is characterized by its length and by its direction. _____
5. It is the length of the line segment joining two points. _____
6. The region of a plane bounded by three or more non-aligned segments. _____
7. It is another way to represent the equation of a line from the slope and the point where the line intercepts the y-axis.

8. Are called _____ lines since they have the same slope.
9. Are called _____ lines when the angle between them is 90° , and the algebraic product of their slopes equals -1.
10. If two lines in the Cartesian plane do not have equal slopes and the multiplication of their slopes does not equal -1, then we say that the lines are _____

II. Answer the following problems correctly.

1. Determine the slope and the inclination angle of the lines that cross the points $(0, -4)$ and $(2, 6)$
2. A straight line crosses the points $(x, 5)$ and $(30, -5)$ and is perpendicular to another line that crosses the points $(10, 4)$ and $(18, -8)$. Find the value of x .

3. Determine if the following lines are parallel, perpendicular or oblique.

$$y - 1 = 7(x - 2) \quad \text{and} \quad x + 7y - 28 = 0$$

4. Determine the distance between the given elements.

a) The line $-5x - 3y + 10 = 0$ and the point $(-1, 6)$.

b) The lines: $y = 3x + 12$ and $y = 3x + 8$

5. Solve the following situation.

An automobile has a gas tank whose capacity is 50 liters and its performance 11 km per liter. If you have just filled the tank, determine:

a) The expression that represents the situation.

b) How many liters are left in the tank when the car has traveled 250 km after having filled it?

c) After how many kilometers does the vehicle run out of gas?