UANL

EVIDENCES PORTFOLIO
EXTRAORDINARY
2nd OPPORTUNITY

FUNCTIONS AND RELATIONS

Student's name:_____

_____

Roll number: _____ **Date**: ____/ ____/ 2022

Teacher: _____ **Group**: _____

The current portfolio is part of the 50% of the evaluation. This part of the grade will be obtained only if meet the requirements:

1. Follow the **instructions provided by the teacher** for the filled of this portfolio.
2. Put your **complete identification data.**
3. **Upload and send** this portfolio **in PDF format**, the **day** and **time** in **which the teacher assigns** on the **Assignment section** of the current **team** corresponding to the **subject in MS Teams**, where the teacher will review.
4. **PLEASE ADD YOUR FULL NAME ON EACH SHEET.**

VISIÓN UANL 2030

La excelencia por principio la educación como instrumento

General guidelines

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2. Put your complete identification data.
3. Upload and send this portfolio in PDF format, the day and time in which the teacher assigns on the Assignment section of the current team corresponding to the subject in MS Teams, where the teacher will review.
4. Please add your full name on each sheet.

Specific academic guidelines

1. The exercises must be answered with all the required procedures to demonstrate the learning and correct result.
2. The exercises in the portfolio can be done with pencil.
3. The procedures must be well organized and with legible letter.

Stage 1

1) Sketch 3 graphs that correspond to a function:

2) Outline 3 graphs that do not correspond to a function:

Given the functions f(x) = 6x + 5 y g(x) = 7 – 8x, find:

3) (f + g) (x)

4) (f - g) (x)

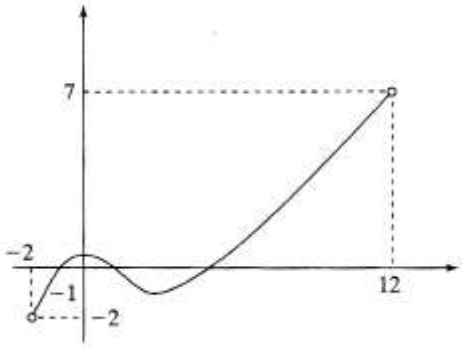
5) (f g) (x)

At a store that sells toys, the price of a stuffed puppy is $8.00, plus a one-time charge of $2.00 for checkout, service, etc. Answer the questions:

6) Determine the price of a box containing a dozen stuffed puppies.

7) How many stuffed puppies will be in the box if the cost of the box is $202.00.

8) Determine the domain and range of the function corresponding to the following graph, expressing it in interval and inequality forms.



Given the quadratic function $y = x^2 - 6x + 8$, determine:

9) Where the graph of the function opens to (concavity).

10) The intersection with the y-axis.

11) The intersections with the x-axis (zeros of the function).

12) The coordinates of the vertex.

13) The equation of the quadratic in vertex form.

14) The equation of the symmetry axis.

15) The graph of the quadratic equation.

STAGE 1 EVALUATION

Checklist			
Type of evaluation: heteroevaluation			
	Criteria	Yes	No
1	Did all the procedures in the exercises.		
2	Had a legible letter and organized procedures.		
3	Achieved the correct answers.		

Stage 2

16) What is the developed form of the following logarithmic expression: $log\frac{ab}{z}$ **?**

17) Determine the logarithmic expression as a single logarithm with a single argument of: 5log x + 3log y – 8log z

Find the value of x for the following logarithmic functions:

18) $\log_4 x = -3$

19) $\log_4 8 = x$

20) $\log_x 5 = \frac{2}{3}$

21) Solve the following exponential equation: $6^x = 279936$

22) The hydrogen potential (pH) is a number used to describe the acidity or basicity of a chemical substance and is defined by the equation pH = -log[H^+] measures the concentration of hydrogen ions in moles per liter. Find the pH of a substance if [H^+] = 1.58 × 10^{-3}.

STAGE 2 EVALUATION

Checklist			
Type of evaluation: heteroevaluation			
	Criteria	Yes	No
1	Did all the procedures in the exercises.		
2	Had a legible letter and organized procedures.		
3	Achieved the correct answers.		

STAGE 3

23) Determine the distance between the points A (- 3, -5) and B (4, -6).

24) Find the coordinates of the midpoint M for the line segment whose ends are: R (7, 4) and G (1, - 2).

25) The point (5, -6) is the midpoint of the line segment AB. If the coordinates of point A are (1, 8), find the coordinates of point B.

26) Determine the equation of the line in its slope form - if it passes through the points (-3, - 10) and (3, 2).

27) Find the equation of the line passing through the point (8,3) and is parallel to the line y= x + 5.

28) Find the equation of the straight line passing through the point (5,2) and is perpendicular to the line $y = -\frac{1}{2}x + 4$

29) Find the distance from the point A (6, -2) to the line 3x - 4y + 4 = 0

STAGE 3 EVALUATION

Checklist			
Type of evaluation: heteroevaluation			
	Criteria	Yes	No
1	Did all the procedures in the exercises.		
2	Had a legible letter and organized procedures.		
3	Achieved the correct answers.		

Stage 4

30) Find the equation of the circle with center at the origin and radius 9.

31) Find the equation of the circle whose center is (5, - 1) and radius 3.

32) Given the equation of the parabola $y^2 = 24x$ determine the coordinates of its focus.

33) Find the equation of the parabola with vertex at the origin and focus at (5, 0).

34) Find the coordinates of the vertices of the following ellipse $\frac{x^2}{100} + \frac{y^2}{64} = 1$

35) Given the equation of the hyperbola $\frac{x^2}{64} - \frac{y^2}{100} = 1$. Find the coordinates of the vertices.

STAGE 4 EVALUATION

Checklist			
Type of evaluation: heteroevaluation			
	Criteria	Yes	No
1	Did all the procedures in the exercises.		
2	Had a legible letter and organized procedures.		
3	Achieved the correct answers.		

Metacognition Activity (Self evaluation)

1. Do you think that after completing this portfolio you have improved your mathematical skills?

   Yes ( ) A bit ( ) Nothing ( )

2. Do you feel you can make more progress in your math skills?

   Yes ( ) A bit ( ) Nothing ( )

3. How would you rate your performance in completing the portfolio of evidence?
   High ( ) Medium ( ) Low ( )

Formulary

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $y = mx + b$ $y - y_1 = m(x - x_1)$ $\frac{x}{a} + \frac{y}{b} = 1$ $X_v = -\frac{b}{2a}$

$y - k = a(x - h)^2$ $\log_b X = \log x / \log b$ $d = \sqrt{(X_2 - X_1)^2 + (Y_2 - Y_1)^2}$

$X_m = \frac{X_1 + X_2}{2}$ $Y_m = \frac{Y_1 + Y_2}{2}$

$d = \left| \frac{Ax + By + C}{\sqrt{A^2 + B^2}} \right|$ $(x-h)^2 + (y-k)^2 = r^2$ $\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$

$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$ ellipse spotlights: $c^2 = a^2 - b^2$ $(y-k)^2 = 4a(x-h)$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$