

Optimization of the Creation of Mathematical Didactic Materials Using Typst

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INTRODUCTION & AIM

⚠️ PROBLEM

HIGH BUREAUCRATIC BURDEN ON TEACHERS AND STUDENT MATHEMATICS ANXIETY.



⚡ NEED

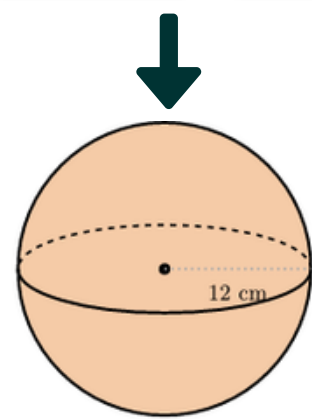
TO TRANSFORM LEARNING TOWARDS A COMPETENCY-BASED AND DIGITAL MODEL IN ACCORDANCE WITH MODERN EDUCATIONAL LAWS (LOMLOE).



✅ AIM

DEVELOP A MODULAR, PARAMETRIC LIBRARY IN TYPST THAT SAVES TIME AND GUARANTEES VISUAL RIGOR (MORENO-CAZORLA, 2017) TO AUTOMATE THE CREATION OF INCLUSIVE (UDL - CAST, 2018) AND GAMIFIED MATERIALS.

```
#libreria_lite.grafico3d('esfera')
{
  Suniters = 330,
  function_secfun = (2,6),
  function = (361),
  paramets = (10,11),
}
```



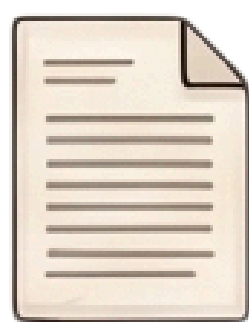
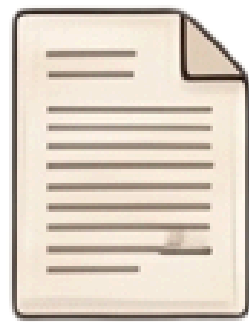
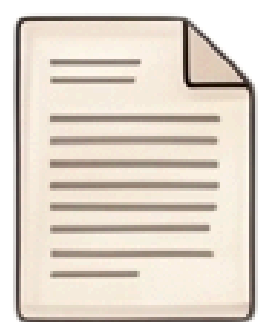
METHOD

20,314 INITIAL STUDIES

Google Scholar

Scopus

Dialnet



2016-2026



Prisma 2020

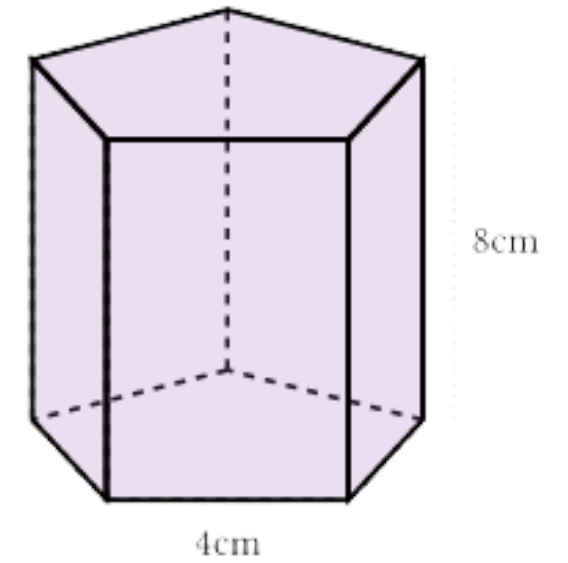
10 KEY STUDIES

VALIDATION OF DIGITAL APPLICATIONS IN MATHEMATICS ACCORDING TO VALERO LARICO ET AL. (2026).

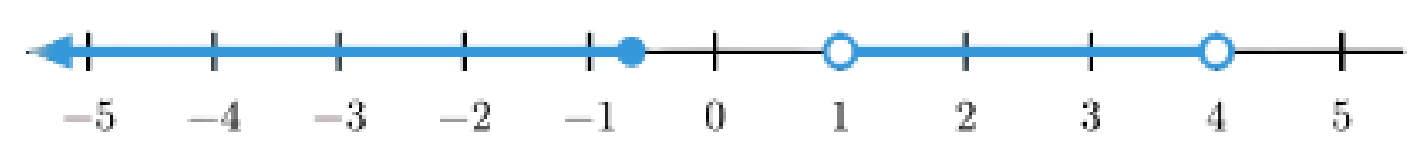
RESULTS & DISCUSSION

LIBRERIA_LITE.TYP SEPARATION OF THE LOGICAL DESIGN FROM THE DIDACTIC CONTENT.

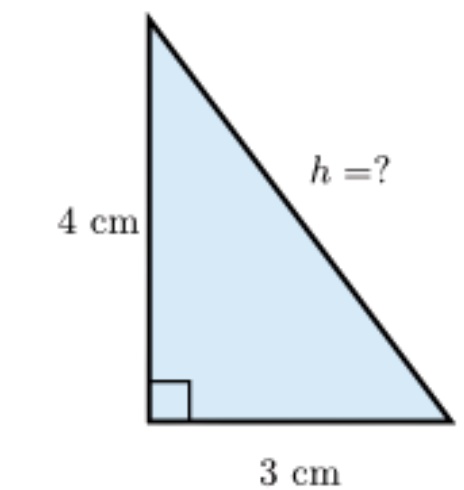
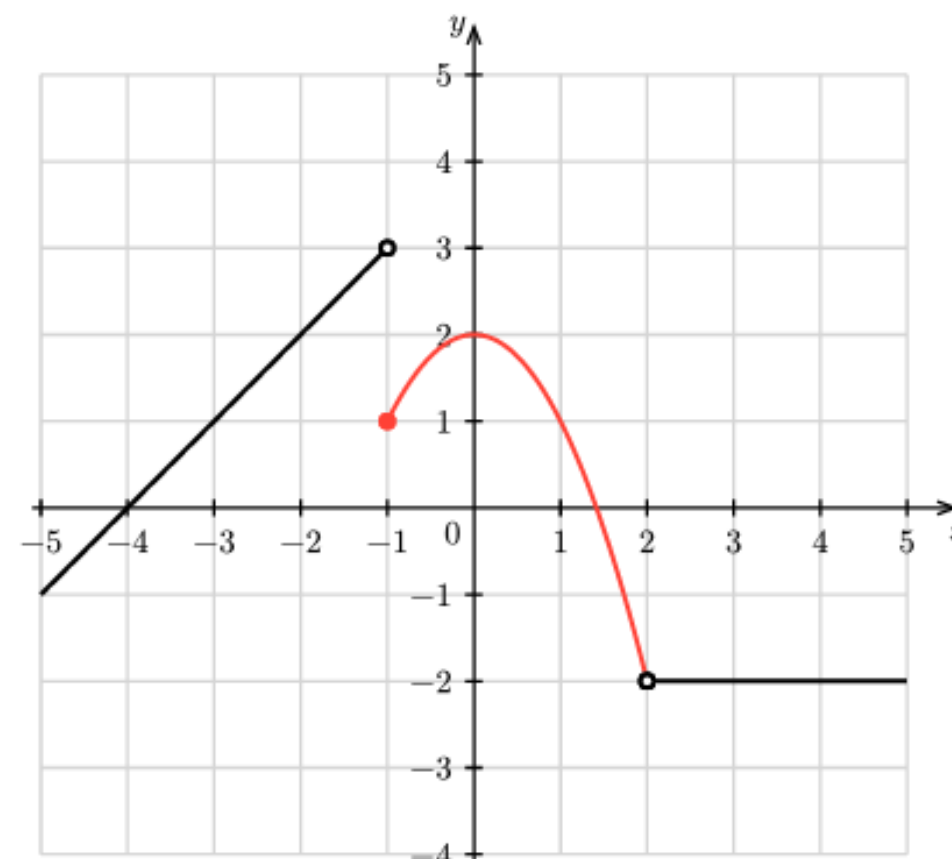
```
#prisma_regular(
  lados: 5,
  radio_base: 2,
  altura: 3.5,
  etiqueta_lado: "4cm",
  etiqueta_altura: "8cm"
)
```



$$f(x) = \begin{cases} x + 4 & \text{si } x < -1 \\ -x^2 + 2 & \text{si } -1 \leq x \leq 2 \\ -2 & \text{si } x > 2 \end{cases}$$



```
#pitagoras(3, 4, mostrar: ver_soluciones)
```



$$h = \sqrt{c_1^2 + c_2^2} = \sqrt{3^2 + 4^2}$$

$$h = \sqrt{9 + 16} = \sqrt{25} = 5 \text{ cm}$$

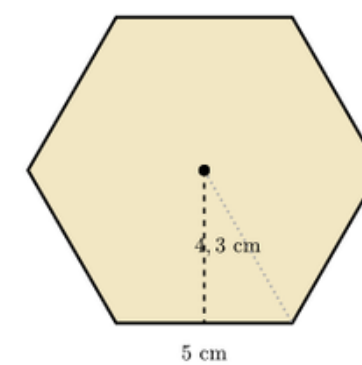
UNIVERSAL DESIGN FOR LEARNING (UDL) SWITCH

ALLOWS INSTANT SWITCHING BETWEEN ORDINARY AND ADAPTED WORKSHEETS WITHOUT STIGMATIZING THE STUDENT.

```
#let adaptacion_dua = true
```

En el centro de la sala hay un altar de ofrendas con forma de hexágono regular perfecto. Para activar el mecanismo, debemos colocar una cuerda dorada alrededor de su borde y luego grabar un símbolo en toda su superficie superior. Calcula el perímetro (para la cuerda) y el área (para el símbolo).

Notas del Cuaderno: El perímetro es la suma de todos sus lados. Para el área, multiplica el Perímetro por la Apotema (la línea que va al centro) y divide el resultado entre 2: $A = \frac{P \cdot a}{2}$.



Asistente de Sistemas: Falta la x ($b = 0$). Pasa el número suelto al otro lado y haz la raíz cuadrada. Recuerda que siempre hay dos soluciones: positiva y negativa.

$$x^2 - 25 = 0$$

CONCLUSION

✅ IMPACT:

AUTOMATION REDUCES THE TEACHING LOAD AND GUARANTEES REAL INCLUSION IN THE CLASSROOM

⚠️ LIMITATION:

INITIAL TECHNOLOGICAL LEARNING CURVE FOR TEACHERS

FUTURE WORK / REFERENCES



DEVELOPMENT OF A WEB INTERFACE (GUI) TO GENERATE WORKSHEETS THROUGH FORMS WITHOUT TOUCHING CODE.



IT IS VITAL TO CONNECT MATHEMATICS WITH MEANINGFUL CONTEXTS SUCH AS THE SDGS (PÉREZ GARCÍA, 2024).