

ANEXO 5. Problemas multiplicativos usando la teoría de los campos conceptuales de Gerard Vergnaud.

El propósito de este instrumento fue recolectar información sobre el desempeño que tenía cada estudiante al resolver problemas de orden multiplicativo, teniendo en cuenta los tipos de problemas que se pueden presentar de acuerdo a Vergnaud (isomorfismo de medidas, producto de medidas y un espacio de medidas) , la finalidad de estos problemas fue identificar cómo los estudiantes interpretaban las relaciones entre cantidades y que esquemas o estrategias cognitivas aplicaban en cada caso.

Análisis de Veranad: Con los resultados obtenidos, se pudo clasificar los problemas, según las estructuras multiplicativas de Vergnaud; teniendo en cuenta: Problema- pregunta- estructura-tipo- operación esperada respuesta del estudiante-dificultad observada.

Please follow these instructions:

- Read the problem carefully.
- Solve the problem using the procedure (steps).
- Write your answer in English, using words and numbers.
- Show how you solved the problem in the space provided.
- This diagnostic test wants to see:
- How you solve the problem in math.
- How you understand and explain the problem in English.

In each question, you will find space to solve and explain your answer.
Take your time and do your best.

Each box contains 6 pencils. If I buy 8 boxes, how many pencils do I have?

$6 \times 8 = 48$ I have 48 pencils

Maria is 12 years old. Her grandfather is 6 times older than Maria. How old is her grandfather?

$12 \times 6 = 72$ The grandpa of Maria is 72 years old

A store sells 3 types of t-shirts and 2 types of pants. How many different outfits can be made?

We can make 6 outfits

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Each child receives 5 candies. If there are 9 children, how many candies are needed?

We needed 4 candies

Each bottle contains 2 liters of water. If there are 12 bottles, how much water is there in total?

$2 \times 12 = 24$ There are 24 liters of water

A box of crayons costs \$1500. How much will 7 boxes cost?

$1500 \times 7 = 10500$ 7 boxes cost \$10,500

A pack of 6 notebooks costs \$18,000. How much does each notebook cost?

$18000 \div 6 = 3000$ a notebook costs \$3,000

There are 45 trees in a park. The number of flowers is 3 times the number of trees. How many flowers are there?

$45 \times 3 = 135$ There are 135 flowers

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$6 \times 8 = 48$ 48 pencils

Maria is 12 years old. Her grandfather is 6 times older than Maria. How old is her grandfather?

$12 \times 6 = 72$ the answer is 72

A store sells 3 types of t-shirts and 2 types of pants. How many different outfits can be made?

6 outfits

Each child receives 5 candies. If there are 9 children, how many candies are needed?

45

Each bottle contains 2 liters of water. If there are 12 bottles, how much water is there in total?

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Nota: Pruebas bilingües de problemas multiplicativos en base a las estructuras de Vergnaud, elaboradas por los docentes Brayan Prieto y Crisian Piranquive; dirigidas a los estudiantes de grado cuarto.