

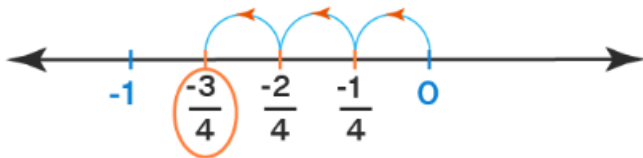


COLEGIO NACIONES UNIDAS I.E.D.
TALLER PREPARATORIO
I TRIMESTRE
MATEMÁTICAS 7°

This workshop must be copied and solved in the mathematics notebook, as a requirement to take the competency test.

DELIVERY DATE: APRIL 2nd - 2024

1L) "How are rational numbers represented on the number line and what is the relationship between the fraction and its position on the line?"



2L) "What is the step-by-step process for adding or subtracting two rational numbers, and how is the end result simplified?"

$$\frac{3}{4} + \frac{2}{3} = ?$$

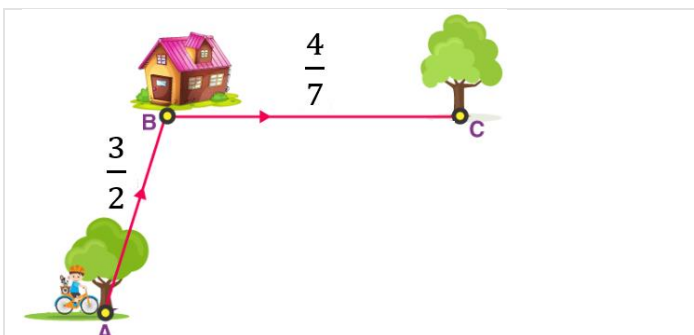
3P) How does the common denominator affect the process of adding rational numbers?

4P) Can you give a practical example of how subtracting rational numbers would be used in everyday life?

5P) Why is it important to simplify fractions before adding or subtracting rational numbers?

6P) What are the differences and similarities between adding and subtracting rational numbers and adding and subtracting integers?

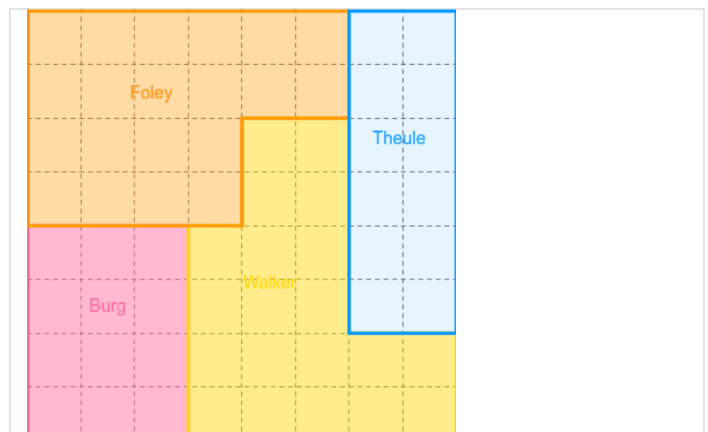
7P) Suppose you plan a $\frac{3}{2}$ kilometer bike ride and then decide to walk an additional $\frac{4}{7}$ kilometers to a scenic overlook. How many total miles will you have traveled?



8P) A student has to solve 1221 of a math problem and then 1331 of another similar problem. What fraction of the work has he done in total?

9P) Imagine you have 5665 of a full tank of water and then you take 1331 of that volume. How much is left in the tank?

10P) Farmer Foley has a portion of a field planted with corn. After a storm, some of the corn is damaged. If the damaged area is equal to the fraction of the field that Farmer Foley owns, how much of the field is still available for harvest?



11P) Explain in your own words how to multiply fractions and why the numerator and denominator are multiplied separately.

12P) If you have 4 debts of \$5 each, how would you express the situation mathematically and what would be the result of multiplying them?

13i) If we have the expression $(3x^2 + 5y - 2z)$, what type of algebraic expression is it?

14i) What type of algebraic expression is $(4a^3b^2 + 2c)$?

15i) If we have the expression $(2x^3 + 3x^2 - 5x)$, how many terms does it contain?

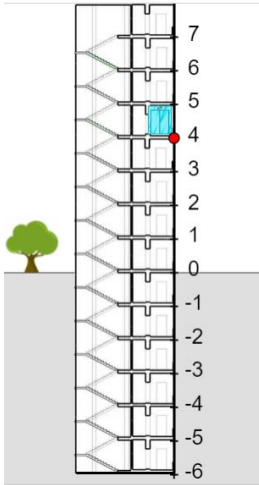
16P) What is the difference between a binomial and a trinomial?

17P) Can you give an example of a polynomial with four terms?

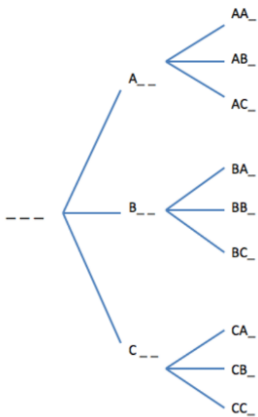
18P) What mathematical operations do monomials have in common?

19P) How is a monomial different from a polynomial in terms of terms?

20P) An elevator is on the 4th floor of a building and goes up 3 floors and then down 13 floors. What floor will the elevator end up on after these trips?



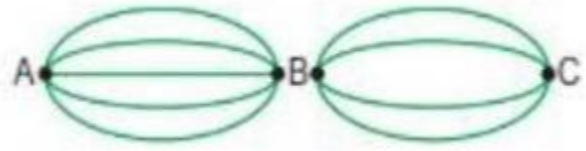
21L) Paula is going to the movies with her friends and has to choose between 3 blouses and 2 skirts. How many ways can Paula dress?. See the example graph.



22i) Esther has 4 blouses and 3 skirts. How many ways can she dress if the blue blouse must always be worn with the light blue skirt?

- A) 3
- B) 4
- C) 12
- D) 7

23i) In the picture, each line represents one way. How many ways can you go from A to C without going back?



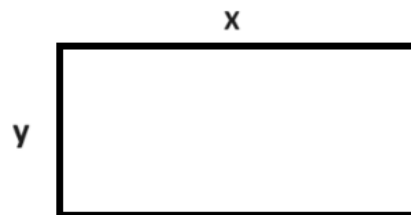
- a) 24
- b) 10
- c) 4
- d) 6

24i) Which of the following statements reflects a principle of multiplication?

- a) Buying hot or iced coffee
- b) Ordering math and physics books
- c) Traveling by public or private transportation
- d) Playing "Super Mario" or "Mario Kart."

25P) With a four-color cloth: yellow, white, red, and green, you want to make flags with vertical stripes of three colors. How many different flags can you make without repeating the colors? Draw the tree diagram.

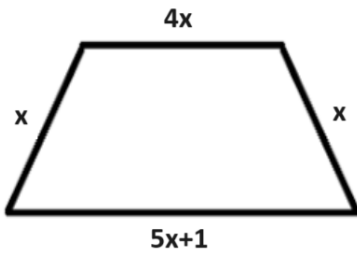
26i) Express algebraically the perimeter of the following figure.



27i) Calculate the area of this rectangle.

28i) If we double the side "x" and triple the side "y" by increasing by 5, what would be the perimeter?

29P) Look at the figure and write the algebraic expression corresponding to its perimeter.



30P) Observe the figure and formulate the algebraic expression corresponding to its perimeter, reducing the similar terms.

