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

DELIVERY DATE: JULY 16

1. A holiday club is distributed by zones. The sports area has an area of (15mn – 5m), the green zone has an area of (7mn + 10m) and the housing area has an area of (5mn + 3m). What is the total area of the club?
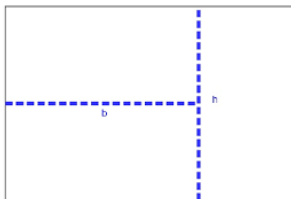
2. If we subtract the green zone area from the total area, what would be the area we would have left?

3. If you want to build 5 vacation clubs like the previous one, what would be the expression that would represent the total area of the 5 clubs?

4. In the complex plane, (2 + i) is the center of a square and (5 + 5i) is one of its vertices. Find the other vertices of the square. Example
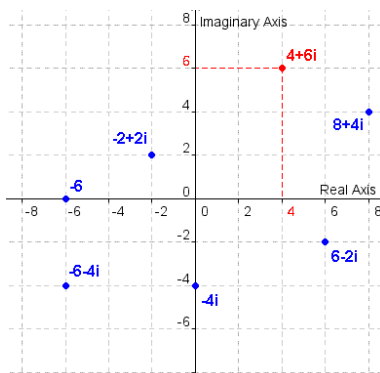
5. Find two complex numbers knowing that their sum is (2 – 8i). Also, the real part of one of them is 3, and the product of both is a real number.

John is working on the following problem about basic operations with complex numbers:

> **"Calculate the result of the following operation: (3+2i) * (4−i)"**

6. What is the standard way to represent a complex number?

7. What does the real and imaginary part of a complex number mean?

8. How do you multiply two complex numbers?

9. What method would you use to check if the multiplication result is correct?

Let's say you have "x" apples and "y" oranges. If the price of an apple is "p" dollars and the price of an orange is "q" dollars.

10. What variables are used to represent the number of apples and oranges?

11. How would you algebraically represent the price of an apple and the price of an orange?

12. What would be the algebraic expression to calculate the total cost of buying all the apples and oranges?

13. What other variables or factors might influence the total cost besides x, y, p, and q?

John is solving the following problem:

> **"If (2x + 3) is a factor of the polynomial 4x³+5x²−7x−6"**

14. What is a factor in terms of polynomials?

15. What does it mean that (2x + 3) is a factor of the given polynomial?

16. How can we find the other factor?

Mary is solving the following problem:

> **"Multiply the polynomials (3x²−2x+1) and (2x³−x²+4x−5)"**

17. What is the initial step to multiply two polynomials?

18. What is the rule for multiplying terms within polynomials?

19. How would you handle similar terms during multiplication?

20. What is the relationship between the multiplication of polynomials and the independent term of the resulting polynomial?

21. Factor the following polynomial by identifying the common factor: $3x^2+6x^3$

22. What is a common factor in terms of polynomials?

23. How do we identify the common factor in a polynomial?

24. What is the process for factoring a polynomial using the common factor?

25. What happens to terms that are not part of the common factor during factorization?

26. What is the use of common factor factorization in simplifying algebraic expressions?

27. Factor the following polynomial using the square difference factorization method: $24x^2 - 9y^2$

28. What conditions must be met in a polynomial to apply the square difference method?

29. What is the formula used to factor the difference of squares?

30. What is the importance of square difference factorization in simplifying algebraic expressions and solving mathematical problems?