Kurikulum
Merdeka

STUDENTS WORKSHEET



Name : .....

Absence number : .....

Class : .....

LIVEWORKSHEETS

System of Linear Equations in Two Variables (40 Minutes)

Through the following activity, you will be guided to create a mathematical model in the form of a system of linear equations and solve real-life problems related to systems of linear equations.

LET'S OBSERVE!

Look and observe the following problem!



In Sukomakmur Village, there is a football field in the shape of a rectangle with a perimeter of 42 m. The difference between the length and width of the football field is 9 m. Determine and solve the system of equations to find the length and width of the football field.

Let:

x = length of the football field in meters.

y = width of the football field in meters.

Given that:

- The perimeter of the field is 42 meters, so the first equation: .....
- The difference between the length and width is 9 meters, so the second equation: .....

Thus the system equation is:

1. x + y = ...
2. x - y = ...

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SUBSTITUTION METHOD

Step 1. Express One Variable in Terms of the Other
From equation (2):

x - y = ...
x = y + ...

Step 2: Substitute into the Other Equation
Substituting x = y + ... into equation (1)

x + y = ...
(y + ...) + y = ...

Step 3: Solve for y

2y + ... = ...
2y = ...
y = ...

Step 4. Find x Using the Value of y

Substituting y = ... into x = y+ .....

x = ... + ...
x = ...

So the solution to the system of linear equations from the problem is x = ... and y = ...
Thus, LENGTH = ... m and WIDTH = ... m



CONCLUSION

Summarize the steps to solve two-variable linear equation problems using the substitution method

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GRAPHICAL METHOD

Step 1. Draw the graph of both equations.

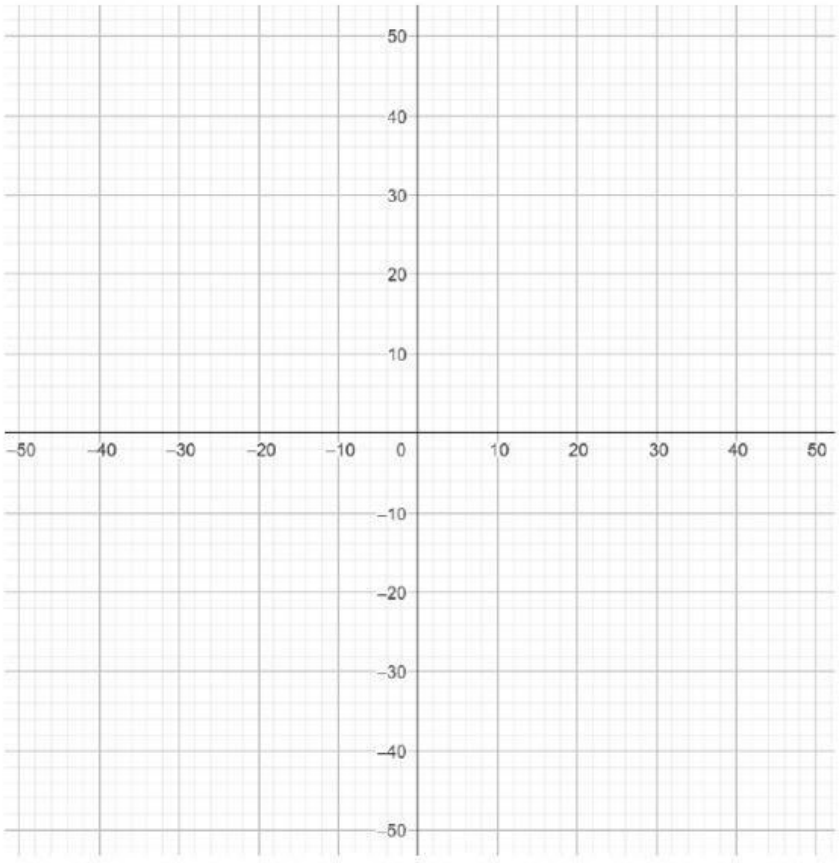
First equation: .....

x	0	
y		0
(x, y)		

Second equation: .....

x	0	
y		0
(x, y)		

Draw on the following graph:



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Step 2. Estimate the intersection point of the two graphs. The intersection point is at (....., ...).

Step 3. Check the intersection point.

Equation (1)

Equation 1 is = ...

Substitute the intersection point into equation 1 = ...

Check if the result is correct.

Equation (2)

Equation 2 is = ...

Substitute the intersection point into equation 2 = ...

Check if the result is correct.

So the solution to the system of linear equations from the problem is (..... , ...)

Thus, LENGTH = ... m and WIDTH = ... m



CONCLUSION

Summarize the steps to solve two-variable linear equation problems using the graphical method

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LET'S EXPLORE

Solving a system of linear equations with two variables (SPLDV) using the substitution and graphical method in Graspable Math

1. Access the Graspable Math website at https://activities.graspablemath.com/ or you can scan the following barcode:

2. Click the "Get Started" button until you are directed to the digital whiteboard.

3. Substitution Method:
   - Enter the equations (1) and (2) that you have obtained in the input box.
   - Use the interactive features to substitute values by dragging elements until you find the values of x and y.

4. Graphical Method:
   - Click the "+" icon in the top left corner.
   - Select "Graphing" to display the graph.
   - Enter the equations (1) and (2) that you have obtained in the input box.
   - Observe the graph and find the intersection point, which is the solution to the system of equations.

5. After completing the tasks in Graspable Math, take a screenshot of your work and Input the screenshot results into a pdf file and upload it to the place provided.

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LET'S PRACTICE

Do the following practice questions!



A fruit seller has a price list for oranges and apples. He states that the price of 3 kg of oranges is the same as the price of 2 kg of apples. Additionally, it is known that if someone buys 2 kg of oranges and 1 kg of apples, the total amount to be paid is Rp70,000. Based on this information, determine the price of 1 kg of oranges and 1 kg of apples.

Answer:

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