

APPLICATIONS OF LINEAR SYSTEMS

Guide Notes

APPLICATIONS OF LINEAR SYSTEM OF EQUATIONS: Are represented through story problems or word problems. The point is to set up the equations and solve the system.

These applications mostly represent the following topics:

- Relation between numbers
- Mixtures
- Business
- Geometry
- Investment

STEP BY STEP: SOLVING APPLICATIONS

- 1) Read the problem carefully to determine the unknown quantities.
- 2) Choose a variable to represent the unknown.
- 3) Translate the problem to the language of algebra to form a system of equations.
- 4) Solve the system of equations and then answer the question of the original problem.
- 5) Verify your solution by returning to the original problem.

Set up the linear system of equations for the following word problems:

1. The sum of 2 numbers is 16 and their difference is 10.

System:



2. A chemistry teacher has a 25% acid solution and another 40% acid solution. He wants to prepare 400 ml of a final solution at 30%

System:



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3. The length of a rectangle is 2 cm more than three times its width and the perimeter of the rectangle is 40 cm.

System:



SAMPLE PROBLEMS

Solve the following verbal problems involving linear systems:

- The sum of 3 times a larger number and twice a smaller is 24. The difference of 2 times the larger and the smaller is 5. Find the numbers.



- A roll of 30 bills contains only \$5 bills and \$10 bills. If the value of the roll is \$250, then how many of each bill are in the roll?

