**Tutoring Plan (systems of linear equations)**

Instructions on how to prompt the AI (perplexity.ai Pro)

# (Prompt 1 first step)

I'm John a Junior in high school and I'm in a lower-class level algebra 1 class how can I Master systems of linear equations using a step by step tutoring plan where I can learn the basics, after that could you show me short videos on systems of linear equations and after teaching me how about systems of linear equations, could you give me a 10-question quiz and track my progress in it, if I get lower than a 60% show me what I got wrong and teach me how I can get a better score after that quiz me again with another 10-question quiz and track my progress by the end of this session l should have gotten better at systems of linear equations. Also interact with me as if you were my tutor.

# BENCHMARK BEFORE TUTOR

My name is John, I am a lower-level algebra 1 student that's beginning to learn systems of linear equations and I need an 8-question quiz to benchmark my abilities and understanding of Systems of Linear equations. Once I submit each answer, do not let me change my answer and do not tell me if I have gotten the question correct or not. Once I am done with the test, grade my test and give an in-depth analysis of where I stand in understanding systems of linear equations with my strong and weak points. Once the test is graded, make a report of everything for my teacher.

My name is John, I need a 8 questions quiz to benchmark my abilities and understanding of Systems of Linear equations. Keep the test questions limited to mathematical equations. Once I submit each answer, do not let me change my answer and do not tell me if I have gotten the question correct or not. Once I am done with the test, grade my test and give an in-depth analysis of where I stand in understanding systems of linear equations with my strong and weak points. Once the test is graded, make a report of everything for my teacher.

(Prompt 3 game) {I am a student named John, create a game for me to learn [insert topic] meant to tutor me.(use this prompt as a guideline for all games as you can change games if needed by asking it to switch.)} but use words problems instead based in a fantasy environment and make it interactive and progressive, so if I get an answer right I progress in the fantasy world too, don't let any other answer besides the correct answer be correct, if the wrong answer is given then hold me in place of that level until they get it right, if I need help explain to me in hints how to solve not directly give me the answer, only give me hints when I ask for it, do not progress to the next level until I say the answer to the previous level, do not give me the direct equation off the first poem I have an example of how everything should look below, the game should have this format of style, do not copy the text below just use the format provided

Welcome, John! I have created an interactive fantasy game to help you learn linear equations. Let us embark on this magical journey through the Realm of Algebraic!

The Quest Begins

You find yourself at the gates of the enchanted Castle of Equations. To progress through each level, you will need to solve word problems based on linear equations. Remember, only the correct answer will allow you to move forward. If you need a hint, just ask!

Level 1: The Enchanted Forest As you enter the Enchanted Forest, you encounter a wise old owl. He poses a riddle: "Young adventurer, listen well, A spell of numbers I shall tell. Two times a number, add three more, Equals thirteen, that's for sure. What's the number? Solve with care, to pass through this forest fair." Solve this linear equation to continue your journey. What's your answer, John?

# Improved prompt for Tutoring all Subjects

You are an AI tutor for [subject area] who is patient, supportive, and aims to help students understand concepts through interactive learning, Start by asking the student about their current understanding of the topic and their learning goals Use open-ended questions to guide the student towards discovering the answer themselves, providing hints and explanations only when needed, When explaining a concept, provide clear examples relevant to the student's experience to solidify understanding, Regularly ask follow-up questions to assess the student's grasp of the material and address any misconceptions. Offer positive feedback and encouragement to motivate the student throughout the learning process

# Lesson Plan for Math teachers

**Base Prompt:**

I am a 9th grade Algebra 1 math teacher. I need to create a lesson plan based on the document provided (including a document based on the current lesson). Include math topics based off of the Document and then create a 5-question conceptual quiz based on the topics. Make sure to add checks for understanding during the lesson plan and to review complex or common misunderstandings.

Without File Prompt:

I am a 9th grade Algebra 1 math teacher. I need to create a lesson plan on [topic of choice]. It needs to include a hook at the beginning about the lesson and where and why you would use this topic.

# Student benchmark check

Dear Teacher,

This report summarizes Arielle's performance on a quiz assessing his understanding of systems of linear equations. The quiz consisted of 8 questions covering various aspects of the topic. Quiz Results:

* Score: 0/8
* Arielle was unable to correctly answer any of the questions, including those involving solving systems, identifying solution types, and understanding geometric interpretations.

Areas Needing Improvement:

1. Solving systems of equations using various methods (substitution, elimination, graphing)
2. Understanding the geometric meaning of different solution types
3. Identifying components of linear equations (e.g., y-intercept)
4. Selecting appropriate problem-solving strategies
5. Grasping fundamental concepts related to systems of linear equations

Recommended Action Plan:

1. Provide additional instruction on the basics of linear equations and systems of equations
2. Offer guided practice in solving systems using different methods
3. Use visual aids to reinforce the geometric interpretations of systems
4. Assign targeted homework to address specific weak areas
5. Consider one-on-one tutoring or small group sessions to address Arielle's individual needs

Arielle's current understanding of systems of linear equations appears to be at a beginning level. With focused instruction and practice, he should be able to improve his grasp of the subject. Regular assessments and feedback will be crucial in monitoring his progress. Please let me know if you need any further information or have any questions regarding Arielle's performance and learning needs.

Jeniya completed an 8-question quiz on systems of linear equations. Here are the results and analysis: Score: 2 out of 8 correct (25%) Strengths:

* Understanding of parallel lines in relation to systems of equations
* Identifying y-intercepts in linear equations

Areas Needing Improvement:

* Solving systems of equations algebraically
* Graphing linear equations and finding points of intersection
* Applying systems of equations to word problems
* Understanding the conceptual meaning of solutions in systems of equations

Recommendations:

1. Provide additional practice with step-by-step methods for solving systems of equations.
2. Offer more opportunities to graph linear equations and interpret the results.
3. Explain the conceptual meaning behind systems of equations and their solutions.
4. Include more word problems that can be solved using systems of equations.
5. Consider one-on-one tutoring or additional support to address John's specific challenges.

Jeniya showed honesty in admitting when she didn't know an answer, which is a positive trait for learning. With targeted practice and support, Jeniya should be able to improve her understanding of systems of linear equations.

I'm Jeniya, a freshman in high school and I'm in a lower-level algebra 1 class. How can I Master systems of linear equations using a step-by-step tutoring plan where I can learn the basics. I currently have minimal knowledge of Systems of Linear Equations. And I need your help in converting word problems into solvable equations, due to the fact that I currently struggle in that aspect. Use the information from the previous benchmark quiz to personalize the tutoring plan. Do not move on to the videos or quiz until we finish the quiz and track my progress in it, if I get lower than a 60% show me what I got wrong and teach me how I can get a better score after that quiz me again with another 10-question quiz and track my progress by the end of this session l should have gotten better at systems of linear equations. Also interact with me as if you were my tutor

## Ethan AI Report: Solving Systems of Equations by Graphing

Student Name: Ethan  
Date: 10/16/24

## Objective

To solve systems of linear equations by graphing and identify the point of intersection as the solution.

## System of Equations

1. *y=−2x−2y*=−2*x*−2
2. *y=−4x−8y*=−4*x*−8

## Graphical Representation

The attached graph shows both equations plotted on the same coordinate plane.

* Blue Line: Represents *y=−2x−2y*=−2*x*−2
* Red Line: Represents *y=−4x−8y*=−4*x*−8

## Analysis

* The lines intersect at approximately *(−3,4)*(−3,4).
* This point is the solution to the system, meaning both equations are satisfied when *x=−3x*=−3 and *y=4y*=4.

## Verification

To verify, substitute *x=−3x*=−3 into both equations:

1. Equation 1:

*y=−2(−3)−2=6−2=4y*=−2(−3)−2=6−2=4

1. Equation 2:

*y=−4(−3)−8=12−8=4y*=−4(−3)−8=12−8=4

Both calculations confirm that the solution is correct.

## Conclusion

Ethan successfully graphed the system of equations and identified the intersection point as the solution. This exercise demonstrates understanding of solving systems using graphical methods.

### Personal Analysis:

Ethan is a picture learner. He prefers being shown graphs and likes examples to help him practice what he is learning.

## Report on Today's Lesson: Solving Systems of Equations

Date: 10/18/24  
Student Name: Ethan

## Objective

The objective of today's lesson was to understand how to solve systems of equations by graphing, identify intersection points, and apply these concepts to real-world scenarios.

## Key Concepts Covered

1. Understanding Systems of Equations
   * A system of equations consists of two or more equations with the same variables.
   * The solution is the point(s) where the graphs of the equations intersect.
2. Graphing Linear Equations
   * Each equation can be graphed on a coordinate plane.
   * Key points are found by calculating x-intercepts and y-intercepts.
3. Finding Points for Each Line
   * To graph an equation, choose values for x, solve for y, and create coordinate pairs.
   * Example: For the equation *y=x+1y*=*x*+1, if x = 0, then y = 1 (point: (0, 1)).
4. Identifying Intersection Points
   * The intersection point represents the solution to the system.
   * This point can be found visually on the graph.
5. Special Cases
   * No Solution: Lines are parallel and do not intersect.
   * Infinite Solutions: Lines are identical and overlap completely.
6. Real-World Application
   * We applied these concepts to a word problem involving a coffee shop selling small and large coffees.
   * The equations were set up based on total sales and revenue, leading to a graphical solution.

## Practice and Assessment

* An 8-question benchmark quiz was administered to assess understanding.
* Key areas for improvement were identified based on quiz results.

## Next Steps

* Review key concepts in more detail, focusing on areas where confusion arose during the quiz.
* Engage in more practice problems to reinforce understanding.
* Explore additional resources such as online graphing tools for visual learning.

This report summarizes today's lesson and outlines areas for further study.

## Ethan’s Personal Report:

Ethan is learning from the AI program. He says his scores have increased and said it’s helping him and not hurting him. He’s asking the AI like it’s a human and is telling it to help him understand more when he’s confused or doesn’t understand a part of the lesson.

Create a game that on literal equations and adding and subtracting integers