Situation 23: Simultaneous Equations

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Prompt

A mentor teacher and student teacher are discussing a student teacher's lesson after it has been taught and the mentor is encouraging the student teacher to probe student thinking and to ask good questions. The class was solving simultaneous equations and the student teacher had chosen the following pair of equations to discuss:

$$y = 2/3\,x + 4 \quad \text{and} \quad 42 = 4x - 6y$$

A high school student had responded that there was not a common solution because they were parallel, and the student teacher had moved to the next problem. The mentor praised the student teacher for picking this pair which had no common solution, but urged him to ask follow-up questions.

Question: What questions could a teacher ask that would help students understand more about solutions to simultaneous equations and what it means not to have a solution? (What would be a good set of pairs of equations for a class to study and why?)

Commentary

Mathematical Foci

Mathematical Focus 1

Mathematical Focus 2

Mathematical Focus 3

References

Note: adapted from an observation at a Clarke County High School in January 2005.