Situation 14: Factoring

Prepared at UGA
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Prompt

Carrie was reviewing homework on factoring. One problem was

$$x^3 - 5x^2 + x + 5 = (x + 5)(-x^2 + 1)$$

Carrie factored the problem:

$$(x + 5)(-1)(x^2 - 1) = -(x + 5)(x + 1)(x - 1)$$

The mentor teacher said, "Carrie, what are you doing? You need to rewrite

$$(-x^2 + 1) = (1 - x^2)$$

and factor." So the problem becomes

$$(x + 5)(1 - x^2) = (x + 5)(1 + x)(1 - x)$$

A student said that she did not understand why you could rewrite

$$(-x^2 + 1)$$

as

$$(1 - x^2)$$

She said she never did that and did not know you could.

What might the student teacher and the mentor teacher do to clear up the confusion?

Commentary

Mathematical Foci

Mathematical Focus 1

Mathematical Focus 2

Mathematical Focus 3

Mathematical Focus 4