

***Situation 26: Absolute Value***  
**Prepared at University of Georgia**  
**Center for Proficiency in Teaching Mathematics**  
**6/28/05 – Kanita DuCloux**

## **Prompt**

A student teacher begins a tenth-grade geometry lesson on solving absolute value equations by reviewing the meaning of absolute value with the class. They discussed that the absolute value represents a distance from zero on the number line and that the distance cannot be negative. He then asks the class what the absolute value tells you about the equation  $x = |2|$ . To which a male student responds “anything coming out of it must be 2”. The student teacher states “ $x$  is the distance of 2 from 0 on the number line”. Then on the board, the student teacher writes

$$|x - 2| = 4$$

$$x + 2 = 4 \quad \text{and} \quad x + 2 = -4$$

$$x = 2 \qquad x = -6$$

And graphs the solution on a number line. A puzzled female student asks, “Why is it 4 and -4? How can you have -6? You said that you couldn’t have a negative distance?”

*How do you respond to the student’s questions?*

## **Commentary**

### **Mathematical Foci**

*Mathematical Focus 1*

*Mathematical Focus 2*

*Mathematical Focus 3*

*Mathematical Focus 4*