Are these expressions equivalent?

Annotation

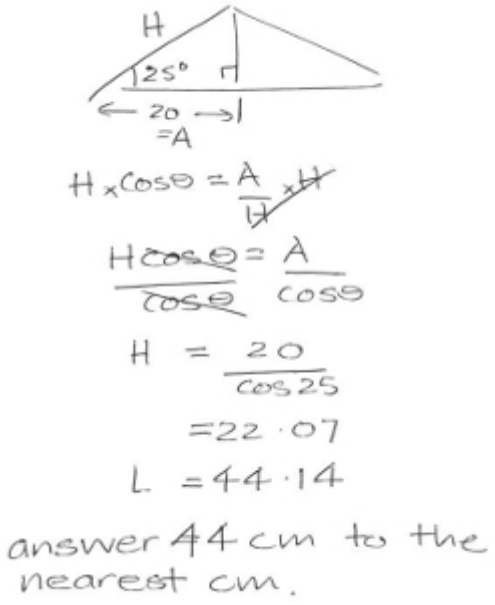
David is able to split a complex problem up into component parts, and to use trigonometry in order to solve the problem. He shows appropriate precision and correct use of units in his final answer.

Problem: Are these expressions equivalent?

The teacher poses the following challenge:

A painting is hung with the strings making 25° angles with the top of the 40 cm wide frame. How long is the visible length of string?

Student Response



Teacher: Tell me about your working here.

David: First I broke the triangle made by the string and the frame into two right angled triangles. I did that by putting that line down the middle. Then I labelled one of these triangles and saw that I need H.

Teacher: What do you mean by H?

David: The hypotenuse, it's the long side of the triangle. I need two times this to get my answer.

Teacher: What did you do next?

David: Well I have the angle and the side called A, the adjacent. But that's only 20 cm because its only halfway along the frame...so I said SOH CAH TOA to myself and chose CAH. I need to use cos to solve this problem. Once I knew it was a cos problem, then it was just a matter of putting the numbers in and rearranging and stuff to get the answer.

Teacher: So you showed 44.14 as an answer from these algebraic steps, but I like how you have not just finished there.

David: Thanks. I know the question was about the length of string in cm, so I had to put the number I got into that form. Also, it would be silly to give an answer to hundredths of a cm because no one would care and you couldn't measure this string that well so I rounded to the nearest whole centimetre.