

## Chapter 1 Problem 34<sup>†</sup>

### Given

*airplane length* = 41.05 m

*antenna length* = 3.6 cm = 0.036 m

### Solution

Find the overall length.

Since we are concerned about significant digits, convert the antenna length into a decimal form of meters. This way the two items being added have the same units.

$$l = (41.05 \text{ m} + 0.036 \text{ m}) = 41.086 \text{ m}$$

Since the length with the least number of significant digits to the right of the decimal point is due to the airplane, then the answer can only be reported to the second digit to the right of the decimal place. Therefore, the answer is

$$l = 41.09 \text{ m}$$

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<sup>†</sup>Problem from Essential University Physics, Wolfson