GENERAL ADVICE FOR FUTURE TEACHERS OF MATH from Margo:

1. Respect the numbers.

Distinguish between EXACT and APPROXIMATE number facts. Be consistent about rounding a decimal fraction and the number of significant digits in your calculations.

Example: there is a 3-4-5 right triangle, but there is no 40-50-64 right triangle because 40*40+50*50=4100 but not 64*64=4096.

2. Respect the words.

Define objects precisely and carefully.

Distinguish between definitions and statements.

Example: An isosceles triangle, by definition, has two sides equal. This definition implies the statement that *an isosceles triangle has two angles equal* (as well as many other properties).

3. Respect the clarity.

Avoid ambiguity in questions. Make sure that your question is clear and can't be misinterpreted. Explain all notations and letters in your formulas. When you introduce variables, letters must correspond to numerical values. Avoid switching notations down the road. Also, make sure that your data are consistent.

Example: In the following figure triangle DAO is a right triangle with sides 3-4-5, thus the angle ADO can't be 20 deg.



4. Respect the logic.

Distinguish between proofs and illustrations.

Example: A figure of a 3-4-5 triangle with squares on its sides is NOT a proof of Pythagorean Theorem. It is just an illustration of it or a practical way to check if the angle is right. A proof must address the general statement, not just particular examples.