

Show all work, including mental steps, in a clearly organized way that speaks for itself. Use proper mathematical notation, identifying expressions by their proper symbols (introducing them if necessary), and use EQUAL SIGNS and arrows when appropriate. Always SIMPLIFY expressions. BOX final short answers. LABEL parts of problem. Keep answers EXACT (but give decimal approximations for interpretation). Indicate where technology is used and what type (Maple, GC).

1. $y'' + y = 3 \cos(2x) : \text{sol} : y = \cos(x) - \cos(2x)$

Verify that this y satisfies the given differential equation.

Organize your work as though you were playing professor.

2. Express this proportionality as an equation:

"The gravitational force F is inversely proportional to the square of the distance r from the point mass m but directly proportional to that mass." Does this sentence contain enough information to determine the sign of the constant of proportionality?

► solution