Assignment 3

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) The order of convergence of Newton-Raphson method near the root is:
   - Incorrect
   - Correct
   - Not applicable

2) The value of \( x \) is:
   - Incorrect
   - Correct
   - Not applicable

3) Assuming \( \alpha = 2 \), the coefficient \( a_0 \) at a point with coordinates \( x_1 = 1 \) and \( x_2 = 6 \) is given as \( a_0 = ____ \)

4) Assuming \( \alpha = 2 \), the coefficient \( a_0 \) at a point with coordinates \( x_1 = 0 \) and \( x_2 = 6 \) is given as \( a_0 = ____ \)

5) Assuming \( \alpha = 1/2 \), the coefficient \( a_0 \) with coordinates \( x_1 = 1/2 \) and \( x_2 = 1/2 \) is given as \( a_0 = ____ \)

6) Assuming \( \alpha = 1/2 \), the coefficient \( a_0 \) with coordinates \( x_1 = 1/2 \) and \( x_2 = 1/2 \) is given as \( a_0 = ____ \)

7) For Questions 7, it is the following:
   - Incorrect
   - Correct
   - Not applicable
   - \( \nabla \cdot \mathbf{u} = \rho \nabla \mathbf{u} \)
   - \( \nabla \cdot \mathbf{u} = \rho \mathbf{u} \nabla \)
   - \( \nabla \cdot \mathbf{u} = \rho \nabla \mathbf{u} \nabla \)
   - \( \nabla \cdot \mathbf{u} = \rho \mathbf{u} \nabla \nabla \)
   - \( \nabla \cdot \mathbf{u} = \rho \mathbf{u} \nabla \nabla \)

8) The value of the first invariant of the gradient of \( \mathbf{u} \) is:
   - Incorrect
   - Correct
   - Not applicable

9) Which of these theorems is used to transform the volumetric integral term into a surface integral term:
   - Divergence theorem
   - Green's theorem
   - Cauchy's theorem
   - None of these

10) The value of a closed three-dimensional body \( V \) can also be expressed as:
    - Incorrect
    - Correct
    - Not applicable
    - \( \int_V \mathbf{f} \cdot d\mathbf{A} \)
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