



المشاريع البحثية للفرقة الاولى بكلية الهندسة الالكترونية بمنوف

اسم المقرر : رياضة هندسية ٤

اساتذة المقرر : أ. د وداد على الجنائني

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1. The main problem of linear programming.

- (a) The graphical method,
- (b) The simplex method in a tabular form,
- (c) The simplex method in the compact form,
- (d) Definition of the dual problem.

2. The vector differential operator ∇ :

- (a) The operator $\vec{a} \cdot \nabla$ for any vector \vec{a}
- (b) Gradient of a scalar point function,
- (c) Divergence of a vector point function,
- (d) Curl (rot) of a vector point function,
- (e) Laplacian operator ∇^2 .

3. Relation between (line, plane surface and volume) integrals.

- (a) Green's theorem in the plane,
- (b) Stokes' Theorem,
- (c) Gauss' Divergence Theorem.

4. Differential operators in orthogonal curvilinear coordinates.

- (a) Gradient,
- (b) Divergence,
- (c) Curl,
- (d) Laplacian operator ∇^2 .

5. Special orthogonal coordinate systems.

- (a) Cartesian coordinates,
- (b) Cylindrical (Polar) coordinates,
- (c) Spherical (Polar) coordinates.