

LTCC PROBLEMS 1. 19.2.2018

Q1. Find the areas of:

- (i) triangles,
- (ii) polygons,
- (iii) circles,
- (iv) ellipses.

Q2. How can one approximate the area of a general region in the plane, when it exists?

Q3. How can area fail to exist?

Q4. With \mathbb{Q} the set of rationals, does $\int_0^1 I_{\mathbb{Q}}(x)dx$ exist:

- (i) as a Riemann integral?
- (ii) as a Lebesgue integral? Give the value of the integral when it exists.

NHB