

F. If the trapezium rule is used to estimate the integral

$$\int_0^1 f(x) \, dx,$$

by splitting the interval $0 \leq x \leq 1$ into 10 intervals then an **overestimate** of the integral is produced. It follows that

- (a) the trapezium rule with 10 intervals underestimates $\int_0^1 2f(x) \, dx$;
- (b) the trapezium rule with 10 intervals underestimates $\int_0^1 (f(x) - 1) \, dx$;
- (c) the trapezium rule with 10 intervals underestimates $\int_1^2 f(x - 1) \, dx$;
- (d) the trapezium rule with 10 intervals underestimates $\int_0^1 (1 - f(x)) \, dx$.