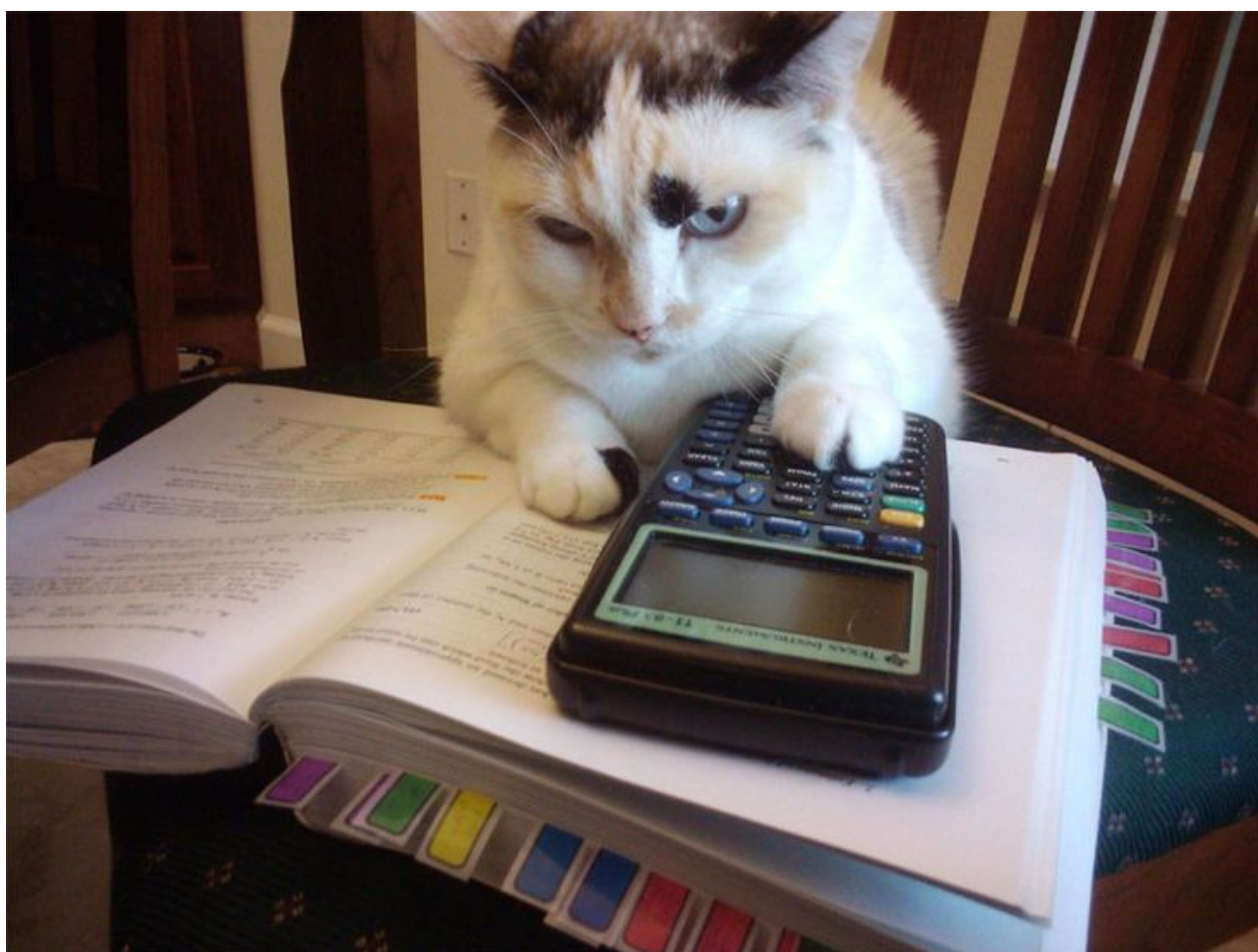


# Speshlist Mathematics

## IA3 Exam Worked Examples



Prove the diagonals of a parallelogram meet at right angles if and only if it is a rhombus.

## 2 Integration and applications of integration

**Example 11.14:**

Evaluate the following:

(a)  $\int \cos^2 x \, dx$

(c)  $\int \sin(2x) \cos(2x) \, dx$

(e)  $\int \sin^3 x \cos^2 x \, dx$

(b)  $\int \tan^2 x \, dx$

(d)  $\int \cos^4 x \, dx$

Determine  $\int x^2 e^x dx$ .

