Name:

Linear Algebra II - Quiz 2

All the solutions should be properly justified and explained. Clarity of the presentation will also be rewarded.

The maximal number of points awarded is 10.

We consider the vector spaces

- P_2 of polynomial of degree at most 2;

- P_3 of polynomial of degree at most 3.

We admit that the map $T : P_2 \to P_3$ defined in the following way is linear:

$$T(p)(x) = \int_1^x p(t)\,\mathrm{d}t.$$

1. Give (without justification) a basis $\mathscr{B}_2$ of P_2 and $\mathscr{B}_3$ of P_3.

2. Compute $[T]_{\mathscr{B}_2}^{\mathscr{B}_3}$.