

**MATH1009 – Midterm (P1) – Retake**  
**Wednesday, June 05, 2019**  
**Instructor: Abuzer Yakaryılmaz**

Name and surname:

Student number:

**Questions**

(90 minutes / 10 points in total)

1. (3 points) Calculate  $\begin{vmatrix} 2 & -2 & -1 \\ 1 & 6 & 2 \\ 5 & 5 & 0 \end{vmatrix}$ .

2. (2 points) If  $\begin{bmatrix} 2 & -2 & -1 \\ 1 & 6 & 2 \\ 5 & 5 & x \end{bmatrix}$  is singular, then what is the value of  $x$ ?

3. (5 points) Solve the following system of linear equations:

$$\begin{array}{rrcrcl} x & + & y & + & z & + & t & = & 4 \\ x & - & y & + & z & - & t & = & -4 \\ x & + & y & - & z & - & t & = & 8 \\ x & - & y & - & z & + & t & = & 12 \end{array}$$

During the exam, please do not use any electronic device or any course (related) material.