FORENAME:

SURNAME:

STUDENT NO:

12

2019–20 **MATH117 Mathematics for Architecture – Homework 4** N. Course

DEADLINE: Friday 1 November 2019, 4:50pm

Exercise 16 (Lines and Planes).

(a) Find parametric equations for the line through $P(3, -2, 1)$ which is parallel to the vector $\mathbf{v} = 2\mathbf{i} - \mathbf{j} + 3\mathbf{k}$.

(b) Find an equation for the plane passing through the points $A(2, 4, 5)$, $B(2, 5, 7)$ and $C(0, 7, 8)$.

Exercise 17 (Intersecting Line and Plane). Find the point where the line $x = -1 + 3t$, $y = -2$, $z = 5t$ intersects the plane $2x - 3z = 7$.

Exercise 18 (Distances). Find the distance from the point $O(0,0,0)$ to the line $x = 5 + 3t$, $y = 5 + 4t$, $z = -3 - 5t$.

Exercise 19 (Distances). Find the distance from the point $S(2,2,3)$ to the plane $2x + y + 2z = 4$.

Exercise 20 (Projections). Find the projection of the line $x = 10+2t$, $y = 13$, $z = 8-3t$ onto the plane $6x+5y+4z = 3$.

I declare that this assignment is entirely my own work. I did not copy from another student and I did not allow anyone to copy from me. *Bu ödevin tamamen kendi çalışmamın ürünü olduğunu, başka bir öğrencinin ödevini kopyalamadığımı; başkasının da benim çalışmamı kopyalamasına izin vermediğimi beyan ederim.*

SIGNATURE: