

Lycee LDDR : Niveau 1 TE 11 Géométrie 3D

2MG Level 1
2018/05/15

SOLID GEOMETRY

TEST 5bis
2MG03

/ 24 pts

Name: _____ 45'

WITH THE CALCULATOR – with formulaire
INDICATE YOUR COMPUTATIONS

➤ EXERCISE 1 ___ / 5

1) Compute the cross product $\begin{pmatrix} 5 \\ -3 \\ 2 \end{pmatrix} \times \begin{pmatrix} 7 \\ 2 \\ -1 \end{pmatrix}$

2) Determine the value(s) of m such that $\begin{pmatrix} m \\ -m \\ 5 \end{pmatrix} \perp \begin{pmatrix} 0 \\ 2m \\ 40 \end{pmatrix}$

➤ EXERCISE 2 ___ / 9

Consider the plane $\pi: 2x - y + 2z - 10 = 0$

- 1) Give a point and a direction vector of that plane.
- 2) Determine the distance from the origin to plane π .
- 3) Give the equation of the two planes that are parallel to plane π and at distance 9 from it.
- 4) Find the coordinates of the point on plane π that is the closest to the origin.

➤ EXERCISE 3 ___ / 10

Consider the line d through $A(2; 6; 4)$ and $B(2; -2; 10)$ and the point $C(4; 0; 7)$.

- 1) Give the parametric equation of d and determine the coordinates of its trace in the sidewall.
- 2) The plane α is perpendicular to line d and contains point C . Give its Cartesian equation.
- 3) Determine the distance from line d to point C .
- 4) Determine the area of the triangle ABC .